

L 7009-66 EWT(d)/EWP(c)/EWP(v)/T/EWP(k)/EWP(l)/ETC(m) ^{WW}
ACC NR: AP5026802

SOURCE CODE: UR/0286/65/000/017/0084/0084

INVENTOR: Akulov, N. S.; Kozlov, V. S.

44 53 77 33

GJS

ORG: none

TITLE: A magnetographic inspection method. Class 42, No. 174415

77 33 14

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 84

TOPIC TAGS: flaw detection, magnetic method, metal inspection

ABSTRACT: This Inventor's Certificate introduces a magnetographic inspection method which consists of applying a ferrotape to the magnetized article being inspected and determining the flaws in the article from the resulting magnetogram. The contrast of the recording on the magnetogram is increased by transverse premagnetization of the ferrotape which is then applied to the article to be inspected in such a way that the magnetic induction vectors of the ferrotape and the article are oppositely directed.

SUB CODE: IE,EM/ SUBM DATE: 26Sep64/ ORIG. REF: 000/ OTH REF: 000

WW
Card 1/1

UDC: 620.179.14.05

0901.1961

ERLIKH, Yakov Moisayevich, kand.ekonom.nauk; KOZLOW, Vladimir Sergeyevich, kand.ekonom.nauk; GOL'IBERG, Abram Mikhaylovich, starshiy prepodavatel'; PRIVEZENTSEVA, A.G., red.; PYATAKOVA, N.D., tekhn.red.

[Statistical study of labor productivity in industry; based on materials of the Odessa Economic Council] Statisticheskoe izuchenie proizvoditel'nosti truda v promyshlennosti; po materialam predpriatii Odesskogo sovnarkhoza. Moskva, Gos.stat. izd-vo, 1959. 129 p. (MIRA 13:2)
(Odessa Province--Productivity accounting)

KOZLOV, V.S., dotaent; ZAKHAROV, F.M.

Methods for eliminating sterility in cows on a state farm. Veterinaria
40 no.5:43-44 My '63. (MIRA 17:1)

1. Alma-Atinskiy zooveterinarnyy institut (for Kozlov). 2. Glavnyy
veterinarnyy vrach sovkoza "Aksay", Alma-Atinskoy oblasti (for Zakha-
rov).

DENISOV, L.A.; KOZLOV, V.S.

Determining the magnetization force necessary for magneto-graphic control. Stroi. truboprov. 8 no.9:19-20 S '63.
(MIRA 16:11)

1. Gosudarstvennyy montazhnyy trest Glavsanekhmontazha
Ministerstva stroitel'stva SSSR, Minsk.

DOLGUSHEVSKIY, F.G., dots.; KOZLOV, V.S., dots.; PANCHENKO, V.P., as-sistent; POLUSHIN, P.I., starshiy prepodavatel'; POSTNIKOVA, G.V., kand. ekon. nauk; ERLIKH, Ya.M., dots.; SHENTSIS, Ye.M., red.; IL'YUSHENKOVA, T.P., tekhn. red.

[Statistical study of labor productivity and the uncovering of its potentials in agriculture] Nekotorye voprosy statisticheskogo izuchenija i vyjavlenija rezervov proizvoditel'nosti truda v sel'skom khoziaistve. [By] F.G. Dolgushevskii i dr. Moskva, Gosstat-izdat, 1962. 189 p. (MIRA 16:1)

1. Prepodavateli Odesskogo kreditno-ekonomiceskogo instituta (for all except Shentsis, Il'yushenkova).
(Odessa Province—Agriculture—Labor productivity)

DOLGUSHEVSKIY, F.G., dots.; GOL'DBERG, A.M., dots.; KOZLOV, V.S.,
dots.; PANCHENKO, V.P., assistant; POLUSHIN, P.I., st.
prepod.; ERLIKH, Ya.M., dots.; TRUKHANOVA, A.N., red.;
IL'YUSHENKOVA, T.P., tekhn. red.

[Problems in economic statistics] Sbornik zadach po ekono-
micheskoi statistike. [By] F.G.Dolgushevskii i dr. Moskva,
Gosstatizdat, 1963. 311 p. (MIRA 16:9)
(Statistics--Problems, exercises, etc.)

DENISOV, L.S., inzh.; KOZLOV, V.S., inzh.

Checking the quality of welding in the construction of municipal
gas lines in the White Russian S.S.R. Stroi. truboprov. 8 no.1:
20-21 Ja '63. (MIRA 16:5)

1. Trest No.24 Gosudarstvennogo montazhnogo tresta Glavsanekhmontazha
Ministerstva stroitel'stva SSSR, Minsk.
(White Russia--Gas pipes--Welding)
(Gamma rays--Industrial applications)

PAVLOV, I.M.; BELOSEVICH, V.K.; Prinimali uchastiye: USHAKOV, Ye.V., inzh.;
KOZLOV, V.S., laborant

Investigating the relationship between the friction coefficient and
speed and pressure on a special unit. Trudy Inst.met. no.9:139-146
'62.

(MIRA 16:5)

(Friction)

KOZLOV, V.S.

New 5th series transformer stations of the State Institute for the
Design and Planning of Electric Power Systems. Prom. energ. 18 no.7:
44-45 J1 '63. (MIRA 16:9)

1. Kazgiprosvetmet.
(Electric substations)

KOZLOV, Vasiliy Sergeyevich; DOBRONEVSKIY, Ye.D., nauchn. red.

[Black and white electron-beam tubes and external auxiliary devices] Chernoc-belye elektronnoluchevye trubki i vneshnie vspomogatel'nye ustroistva. Moskva, TSent nauchno-issl. in-t patentnoi informatsii i tekhniko-ekon. issl., 1964. 40 p. (MIRA 18:5)

KOZLOV, V.S. (Minsk)

Increasing the reliability of the MD-11 defectoscope. Stroi.
truboprov. 10 no.2;29 F '65. (MIRA 18:5)

KUZLOV, V.S., inzh. (g. Chimkent)

A simplified method of determining the maximum power consumption of agricultural consumers. Energetik 13 no.8:17-18 Ag '65. (MIRA 18:9)

DENISOV, I.S., Inzh.; KOBLOV, V.S., Inzh.

Magnetographic method of controlling welded joints. Svar. proizv.
no. 7:16-18 Jl '65. (MKA 18:8)

KOZLOV, V.Sh., inzh.

Precast reinforced concrete sectional girders. Prom. stroi. 1
inzh. soor. 1 no.1:29-32 0 '59. (MIRA 13:12)
(Girders)

GUTMAN, G.I., inzh.; KOZLOV, V.Sh., inzh.; SYTNIK, V.I., inzh.

Open standard crane trestles. Prom.stroi. 38 no.1:25-27
'60. (MIRA 13:5)
(Cranes, derricks, etc.)
(Trestles)

KOZLOV, V.Sh.; SVESHNIKOV, G.V.

Experimental construction of a building from machine-cast
elements. Prom.stroi. 39 no.8, 35-40 '61. (MIRA 14:9)
(Kiev--Precast concrete construction)

LIBERMAN, A.D., kand.tekhn.nauk; KOZLOV, V.Sh., inzh.; SVESHNIKOV, G.V.,
inzh.

Design and construction of a mechanically assembled building for an
automatic machine-tool plant. Prom. stroi. 39 no.10:42-47 0
'61. (MIRA 14:10)

1. Nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy
Akademii stroitel'stva i arkhitektury USSR (for Liberman).
2. Kiyevskiy Promstroyprojekt (for Kozlov). 3. Kiyevskiy sovnar-
khoz (for Sveshnikov).
(Kiev--Precast concrete construction)

KOZLOV, Vladimir Shalevich; DYKHOVICHNYY, Aleksandr Aleksandrovich;
GONCHAR, A.S., red.; BERGER, K.V., red.; YEREMINA, I.A.,
tekhn. red.

[Design of reinforced-concrete elements; mechanical methods]
Raschet zhelezobetonnykh konstruktsii; mekhanizirovannye me-
tody. Kiev, Gosstroizdat USSR, 1963. 493 p. (MIRA 16:4)
(Calculating machines) (Precast concrete)

DENISOV, L.S.; KOZLOV, V.S.

Possibilities for using pulse magnetization in magnitographic
control of city gas mains. Stroi. truboprov. 9 no.5:23-26 My
164. (MIRA 17:9)

1. Trest No.24 Santekhmontazh, Minsk.

KORSHUNOV, D.A., inzh.; KOZLOV, V.Sh., inzh.

Standard elements for precast monolithic short shells. Stroi.
konstr. no.2:5-14 '65. (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy
SSSR, Kiyev (for Korshunov). 2. Kiyevskiy Gosudarstvennyy
projektnyy institut po obshchestroitel'nomu i sanitarno-
tekhnicheskому proyektirovaniyu promyshlennyykh predpriyatiy
Gosstroya SSSR (for Kozlov).

KOZLOV, V.Sh., inzh.; SAMOLETOV, M.V., inzh.; KHARITONOV, I.G., inzh.;
KORSHUNOV, D.A., kand. tekhn. nauk

Standardization of open gantry cranes. Prom. stroi. 42 no.6:
20-23 '65. (MIRA 18:12)

1. Kiyevskiy gosudarstvennyy proyektnyy institut po obshchestroitel'nomu i sanitarno-tehnicheskому proyektirovaniyy promyshlennyykh predpriyatiy Gosstroya SSSR (for all except Korshunov). 2. Nauchno-issledovatel'skiy institut stroitel'nykh konstruktsiy Gosstroya SSSR (for Korshunov).

124-57-1-1077

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 1, p 150 (USSR)

AUTHOR: Kozlov, V. T.

TITLE: Torsion of Compound Beams Made of Rolled Angle Irons
(Krucheniye sostavnykh sterzhney iz prokatnykh ugolkov)

PERIODICAL: Nauch. zap. Odessk. politekhn. in-ta, 1956, Vol 9, pp 105-110

ABSTRACT: Bibliographic entry

1. Beams--Stresses--Bibliography

Card 1/1

Kozlov, V.T

AUTHORS: Kozlov, V. T., and Dorogostayskiy, Z. E.

TITLE: Instrument for Determining Transverse Deformation of Rod Specimens (Pribor dlya opredeleniya poperechnoy deformatsii sterzhnevykh obraztsov)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, No. 1, pp. 103-104

ABSTRACT: The article describes an instrument proposed by Prof. A. P. Korobov for determining the transverse deformation where a rod is either stretched or compressed longitudinally. It is based on the application of a transmitting, double-knee lever device clamped on the piece that is being tested. A dial indicator is included in the circuit of the instrument. A diagram showing the principle of the instrument is presented. The instrument is of simple construction, portable and reliable in its functioning.

ASSOCIATION: Odessa Polytechnical Institute (Odesskiy politekhnicheskiy institut)

PRESENTED BY:
Card 1/2

Instrument for Determining Transverse
Deformation of Rod Specimens

SUBMITTED:

AVAILABLE:

Card 2/2

KOZLOV, V.T.

Experimental investigation of deformations of noncircular rods
subjected to free and hindered torsion. Nauch.zap. Od.politekh.inst.14:
85-95 '59. (MIRA 14:3)

(Elastic rods and wires)

L 43080-66 EWP(k)/EWT(m)/T/EWP(w)/EWP(t)/ETI IJP(c) JD/EW
ACC NR: AR6014374 (A,N) SOURCE CODE: UR/0137/65/000/011/D005/D005

AUTHORS: Kozlov, V. T.; Vysochin, V. D.

TITLE: Improvement of fatigue properties of wire cable by means of elastic-plastic elongation

SOURCE: Ref. zh. Metallurgiya, Abs. 11D30

REF SOURCE: Sb. Stal'n. kanaty. Vyp. 2. Kiyev, Tekhnika, 1965, 425-427

TOPIC TAGS: wire, wire product, fatigue strength, elongation

ABSTRACT: Results of investigations show that elastic-plastic elongation changes the character of the distribution of residual tensions. The fatigue properties of wire cables are notably improved by the proper choice of drawing technology and elongation stresses. 3 illustrations, 2 tables. L. Kochanova Translation of abstract

SUB CODE: 13,11,20

Card 1/1 gd

UDC: 621.771.001

15.9120
11.2210

2209, 1403, 1138 only

86295

S/190/60/002/008/007/017
B004/B054

AUTHORS:

Tarasova, Z. N., Kaplunov, M. Ya., Kozlov, V. T.,
Klauzen, N. A., Dogadkin, B. A.

TITLE:

Interaction of Sulfur With Natural Rubber Under the Action
of Ionizing Radiation

PERIODICAL:

Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 8,
pp. 1201-1206

TEXT: The authors study the problem of production of radiation-resisting rubbers, the conditions for a common vulcanization of irradiated and sulfurated rubbers, and the modification of rubbers treated with radiation. The present paper gives the first informative results of investigation of the effect of radiation by ^{60}Co on rubber in the presence of sulfur. A considerable sulfur addition occurred at 25°C , and was accelerated by an increase in the radiation dose and temperature, particularly by addition of hexane chloro ethane. In thermal vulcanization, the admixture of chloro derivatives showed no effect on sulfur addition. The presence of sulfur delays the structuration as compared with rubber without sulfur admixture. ✓

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Interaction of Sulfur With Natural Rubber Under S/190/60/002/008/007/017
the Action of Ionizing Radiation B004/B054

But structuration increases also here between -80°C and $+100^{\circ}\text{C}$ with increasing temperature. Pure rubber showed at 50°C a reversion of the structuration process, which was not observed in the presence of sulfur in the temperature range investigated. A study of the infrared spectra in argon of irradiated rubbers with and without sulfur showed a decrease in intensity of the 840 cm^{-1} band due to a reduced degree of nonsaturation. This effect was more intense in the presence of sulfur. The decrease in intensity of the 2940 and 1450 cm^{-1} bands due to a reduced number of CH_2 groups or ring formation was, however, more intense in the presence of sulfur. An investigation of the sulfur exchange at 120°C in irradiated rubber tagged with radioactive sulfur, carried out by a method described in Ref. 7, showed that about 40% of sulfur is exchangeable. This amount does not depend on the radiation dose (up to 100 megaroentgens). The high degree of exchangeability is ascribed to a formation of polysulfide groups. Sulfurous rubbers with addition of hexachloro ethane showed, on irradiation with 20 megaroentgens, maximum values of tensile strength (about 130 kg/cm^2) and of elongation. When irradiating pure rubber, a maximum (about 100 kg/cm^2) is only attained at 50-70 megaroentgens. Sulfurous irradiated vulcanizates showed a faster stress relaxation than irradiated vulcanizates free from

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Interaction of Sulfur With Natural Rubber Under S/190/60/002/008/007/017
the Action of Ionizing Radiation B004/B054

sulfur. The authors assume that sulfur addition leads to a more homogeneous and regular structure since secondary reactions causing chain ramification are inhibited. There are 7 figures and 7 references: 3 Soviet, 3 US, and 1 British.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of the Tire Industry)

SUBMITTED: March 24, 1960

Card 3/3

S/844/62/000/000/095/129
D204/D307

AUTHORS: Dogadkin, B. A., Tarasova, Z. N., Kaplunov, N. Ya., Kozlov, V. T., Klauzen, I. A. and Matveyev, V. S.

TITLE: The interactions of sulfur with polymers under the action or irradiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimi. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 554-562

TEXT: The interactions of S with natural rubber, 1,4-cis-polybutadiene, butadiene-styrene and butyl rubber was studied, under irradiation from a Co^{60} source. S added on to natural rubber at 25 - 100°C and to butadiene-styrene rubber and polyethylene at 25°C, under argon, in amounts increasing with the dose (0 - 120 Mr), the rate of addition being faster at higher temperatures. At room temperature the amount of S added on is independent of the initial S-content in the starting mixture (1 - 10% by weight). The addition

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S/844/62/000/000/095/129
D204/D507

The interactions of ...

was promoted by C_2Cl_6 . The presence of S hindered the development of structurization, which was, however, promoted by raising the temperature from -80 to 100°C. Pure natural rubber developed cross-linking only up to ~50°C, above which temperature the process was reversed; this reversal was not observed in the presence of 2% S, up to 100°C. The presence of 1 - 4% S in CKC-30AM (SKS-30AM) butadiene-styrene rubber led only to a slight reduction in the degree of cross-linking on irradiation. The loss of unsaturation and $-CH_2-$ groups on irradiation was studied (by ir spectroscopy) on natural rubber both in the presence and absence of S, and was found to be greater in the latter case. The S adds on in a form capable of isotopic exchange with elemental sulfur. Initially 70% of the added sulfur may be exchanged in natural and butadiene-styrene rubbers; this value falls with irradiation to a constant 40% at 50 - 120 Mr. Radiational vulcanizates of natural rubber exhibit increased tensile strength when the polymer contains 2% S, particularly at 100°C; in general, the strength increases with the dose of irradiation. The best strengths were obtained for a mixture of

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The interactions of ...

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D204/D307

natural rubber, S, and C_2Cl_6 . The sulfur is believed to interact with the polymeric radicals (formed on irradiation by C-C fission) to form polysulfides which (a) lower the thermomechanical stability, and (b) prevent recombination reactions and reactions of radicals formed with $C=C$, thus hindering the development of branched structures. There are 12 figures.

ASSOCIATION: NII shinnoy promyshlennosti (NII of the Tire Industry)

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Card 3/3

S/190/62/004/008/010/016
B101/B180

AUTHORS: Tarasova, Z. N., Fogel'son, M. S., Kozlov, V. T.
Kashlinskiy, A. I., Kaplunov, M. Ya., Dogadkin, B. A.

TITLE: Epr study of the radiation vulcanization of rubber in the
presence of sulfur and hexachlor ethane

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 8, 1962,
1204-1209

TEXT: Recorded epr spectra were used to study the formation of free
radicals during the radiation polymerization of natural rubber (NR) and
mixtures of NR with 2wt.% sulfur or 10wt.% C_2Cl_6 . Irradiation was

conducted at -196 - $+20^{\circ}C$ with Co^{60} at a dose of 6 - 11 Mr. Results:

(1) Long-lived radicals with an initial concentration of $(1-2.5) \cdot 10^{14} mg^{-1}$
form in NR and its mixtures with S or C_2Cl_6 at $20^{\circ}C$ and 6-8Mr.

(2) Radicals of different lives form with irradiation at $-196^{\circ}C$. Their
initial concentrations in NR, NR + C_2Cl_6 and in NR + S are

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Epr study of the radiation ...

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B101/E180

$(4.9 \pm 0.7) \cdot 10^{15} \text{ mg}^{-1}$, $(11 \pm 2) \cdot 10^{15} \text{ mg}^{-1}$, and $(2.6 \pm 0.6) \cdot 10^{15} \text{ mg}^{-1}$, respectively. The inhibiting effect of S is due to delocalization of an electron in

the S_8 ring. (3) If the NR + C_2Cl_6 sample irradiated at -196°C is slowly brought to room temperature, structuration occurs near the vitrification temperature (-70°C). Short-lived radicals disappear and the concentration of free radicals approaches the room temperature level. (4) Gradual heating of the NR + S sample yields new short-lived radicals with a g factor of 2.027 ± 0.003 which is typical of S radicals. The radicals whose concentration reaches a maximum of approximately

$5 \cdot 10^{14} \text{ mg}^{-1}$ at -80°C are formed by reaction between NR and S, the S_8 ring being ruptured. (5) After irradiation, crystalline C_2Cl_6 showed an intensive epr signal, from which it is assumed that various types of radical are formed. The formation of Cl_3 radicals was confirmed by the analytical detection of chloroform. (6) Structuration of NR irradiated at low temperatures is supported by C_2Cl_6 and impeded by S which increases

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Epr study of the radiation ...

S/190/62/004/008/010/016
B101/B180

the static strength of the radiation vulcanizate. (7) Crystalline S
showed only a weak epr signal. There are 5 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti
(Scientific Research Institute of the Tire Industry)

SUBMITTED: May 12, 1961

Card 3/3

L-17560-65 / EMD(1)/EWT(1)/ETT(1)/ETP(1)-2/EPR/EWP(1)/T/EWA(1) / P-14/
Pr-14/Ps-14/Feb/Pr-14 / GO/RM

ACCESSION NR.: A P4049784

8/0138/64/000/011/0028/0033

AUTHOR: Kaplinov, M. Ya.; Khozak, V. V.; Kozlov, V. I.; Sobolev, V. S.; Tarasova, Z. N.; Borisov, V. A.; Karpov, V. L.; Dogadkin, B. A.

TITLE: Thermoradiation vulcanization of tires

SOURCE: Kauchuk i rezina, no. 11, 1964, 28-33

TOPIC TAGS: thermoradiation vulcanization, rubber structure, sulfur vulcanization, tire wear, thermal aging

ABSTRACT: The effectiveness of the method of thermoradiation vulcanization was investigated from the point of view of increasing the quality of the tires. The radiation unit consisted of 18 spent, heat-liberating elements from an atomic reactor. The total activity amounted to 76,000 gram equivalents of radium. Not more than six 5,60-15 tires could be treated at one time in a cylindrical vat with a hermetically closed cover. The tires had a reduced content of vulcanizing agent; one contained a sensitizer of radiation structuring-hexachlorethane. Irradiation was in an argon medium at 0,35 atm pressure. The temperature did not exceed 40°C. Radiation doses amounted to 5, 9, 13, and 20 Mrad. The resulting vulcanizate had the optimum relationship of crosslinks of the type -C=C- and

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5-17560-65

ACCESSION NR: APM4044784

-C-S-C-. The destructive processes as well as processes of oxidation and trans-isomerization were less than during sulfur and radiation vulcanization. The relative content of rubber in the "active" portion of the vulcanization network was high. The rubbers had much higher elasticity and strength, as well as increased resistance to thermal aging and wear. Accelerated road tests showed 15-40% greater wear resistance than standard tires. The relationship between structurization and destruction was determined by A. S. Lyulin, N. D. Stepanov, V. Ye. Leonichiy and L. M. Dmityev (member of NIFKh) took part in setting up the apparatus. The design of the apparatus was developed under the guidance of G. N. Lisov (member of NIFKh). Measurements of radioactivity and dosimetry were carried out by A. G. Vasil'yev and V. Ye. Drozdova (member of NIFKh). The TeZL MShZ took part in manufacturing the tires. Orig. art. has 5 figures and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy Institut shimanov promyshlennosti (Scientific Research Institute for the Tire Industry), Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Research Institute for Physics and Chemistry).

SUBMITTED: 00

ENG: 00

SUB CODE: MT

NO REF SOV: 005

OTHER: 001

Card

2/2

L 15191-66 ENT(m)/EFF(n)-2/EMP(j)/T/ENA(h)/EWA(1) GO/GS/RM

ACC NR: AT5023444

SOURCE CODE: UR/0000/65/000/000/0220/0229

AUTHOR: Kozlov, V. T.

ORG: none

TITLE: Radiative cross linking of rubber-like polymers

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 220-229

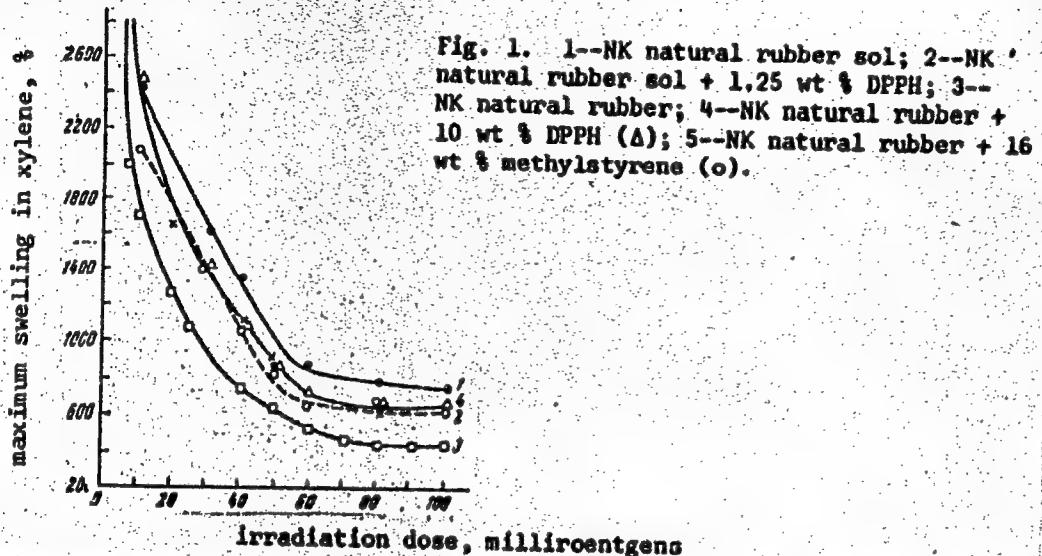
TOPIC TAGS: radiation polymerization, radical polymerization, synthetic rubber, isoprene, polychloroprene, polybutadiene, EPR, natural rubber, irradiation effect, gamma irradiation, free radical

ABSTRACT: The effect of irradiation on cross linking of NK natural rubber, SKI-3 polyisoprene rubber, KhK chloroprene rubber, SKD polybutadiene rubber, SKS-30 and ARM butadiene-styrene rubbers, SKMS-30 and ARKM butadiene-methylstyrene rubbers, and SKEP ethylene-propylene rubber is studied. The yields of free radicals under γ -irradiation of solid rubbers (-196°C) were measured by EPR technique at -196°C and the yields of cross linking were measured in terms of maximum swelling in xylene at room temperature. Radiative cross linking of natural rubber and the sol fraction of

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ACC NR: AT5023444

natural rubber with various contents of diphenylpicrylhydrazine (DPPH) as a function of irradiation dose is shown in fig. 1.



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ACC NR: AT5023444

The radiative cross linking of rubbers proceeds mainly via the ionic-molecular mechanism. It was found that irradiation of rubbers results in an initial loss of free radicals due to recombination and that for each type of rubber there is an optimum irradiation dose for maximum free radical buildup and cross linking. Orig. art. has: 3 figures, 1 table.

SUB CODE: 07,11/ SUBM DATE: 23Feb65/ ORIG REF: 009/ OTH REF: 001

Card 3/3 *versus*

TARASOVA, Z. N.; DOGADKIN, B. A.; LYKIN, A. S.; KAPLUNOV, M. Ya.; KHOZAK, V. K.;
KOZLOV, V. T.; SOBOLEV, V. S.; KLAUZEN, N. A.

"Struktura i svoystva vulkanizatov, poluchennykh kombinirovannym deystviem
sery i ioniziruyushchikh izlucheniy."

report submitted for 35th Intl Cong, Industrial Chemistry, Warsaw, 15-19
Sep 64.

Nauchno-issledovatel'skiy institut shinnoy promyshlennosti, Moscow.

YANSHIN, A.L., akademik; YAKOVLEV, Yu.Ya. (Moskva); PLOTKIN, S.Ya., kand.tekhn. nauk (Moskva); GVOZDETSKIY, N.A., prof.; NOVIK, I.B. (Moskva); SVINTSITSKIY, V.N. (Moskva); KOZLOV, V.V. (Moskva); SULIDI-KONDRAT'YEV, Ye.D. (Moskva); BELOV, S.V. (Leningrad)

Books. Priroda 54 no.7:56-57; 71; 104-111 J1 '65.

(MIRA 18:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (for Gvozdetskiy).

KOZLOV, Vadim Valentinovich

Legal-medical significance of Gunsmith Lubricants concerning
Bullet Wounds (experimental research)

Dissertation for candidate of a Medical Science degree. Chair of Legal
Medicines (head, Asst. Prof. I.V. Skopin) Saratov Medical Institute, 1957

KOZLOV, V.V. (Vadim Valentinovich)

Significance of the impregnation of skin nerve fibers with silver
for the diagnosis of intravital injuries. Sud.-med.ekspert. 3 no.1:
18-21 Ja-Mr '60. (MIRA 13:5)

1. Kafedra sudebnoy meditsiny (zav. - dotsent I.V. Skopin [deceased])
Saratovskogo meditsinskogo instituta.
(WOUNDS AND INJURIES) (SKIN--INNERVATION)

KOZLOV, V.V.

We are improving the remote control of deep wells. Neftainik 3 no.4;
26 Ap '58. (MIRA 11:5)

1. Ispolnyayushchiy obyazannosti nachal'nika konstruktorskogo byuro
elektromontazhnogo tsekha neftepromyslovogo upravleniya Starogrozneft'.
(Oil wells) (Remote control)

AFANAS'YEV, P.M., inzh.; BORODICH, M.K., inzh.; DOLGOV, V.A., inzh.;
KOZLOV, V.V., inzh.

Manufacture of wire-reinforced concrete articles on the TP-906
unit in Krasnodar. Bet. i zhel.-bet. no.6:254-257 Je '61.
(MIRA 14:7)
(Krasnodar—Prestressed concrete)

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100
BORODICH, M.K., nauchnyy sotrudnik; AFANAS'YEV, P.M., nauchnyy sotrudnik;
KOZLOV, V.V.

Tensioning station of very simple design. Bet. i zhel.-bet.
8 no.6:276 Je '62. (MIRA 15:7)

1. Krasnodarskiy filial Nauchno-issledovatel'skogo instituta
po stroitel'stvu Ministerstva stroitel'stva RSFSR (for Borodich,
Afanas'yev). 2. Glavnnyy inzhener zavoda No.3 Krasnodarskogo
sovnarkhoza (for Kozlov).
(Prestressed concrete)

KOZLOV, Vasilii Vasil'yevich; BEDRAK, T.V., red.; DATRIYEVA, Ye.U.,
tekhn. red.

[On multinational collective farm] V mnogonatsional'nom
kolkhoze. Ordzhonikidze, Severo-osetinskoe knizhnoe izd-vo,
1959. 18 p. (MIRA 16:7)

(Collective farms)

KOZLOV, V.V. (Moskva); SULIDI-KONDRAT'YEV, Ye.D. (Moskva)

Before the flight into the unknown; collection of papers "New discoveries about the moon." Reviewed by V. V. Kozlov, E. D. Sulidi-Kondrat'ev. Priroda 53 no.4:118 '64. (MIRA 17:4)

KOZLOV, V.V., kand.med.nauk

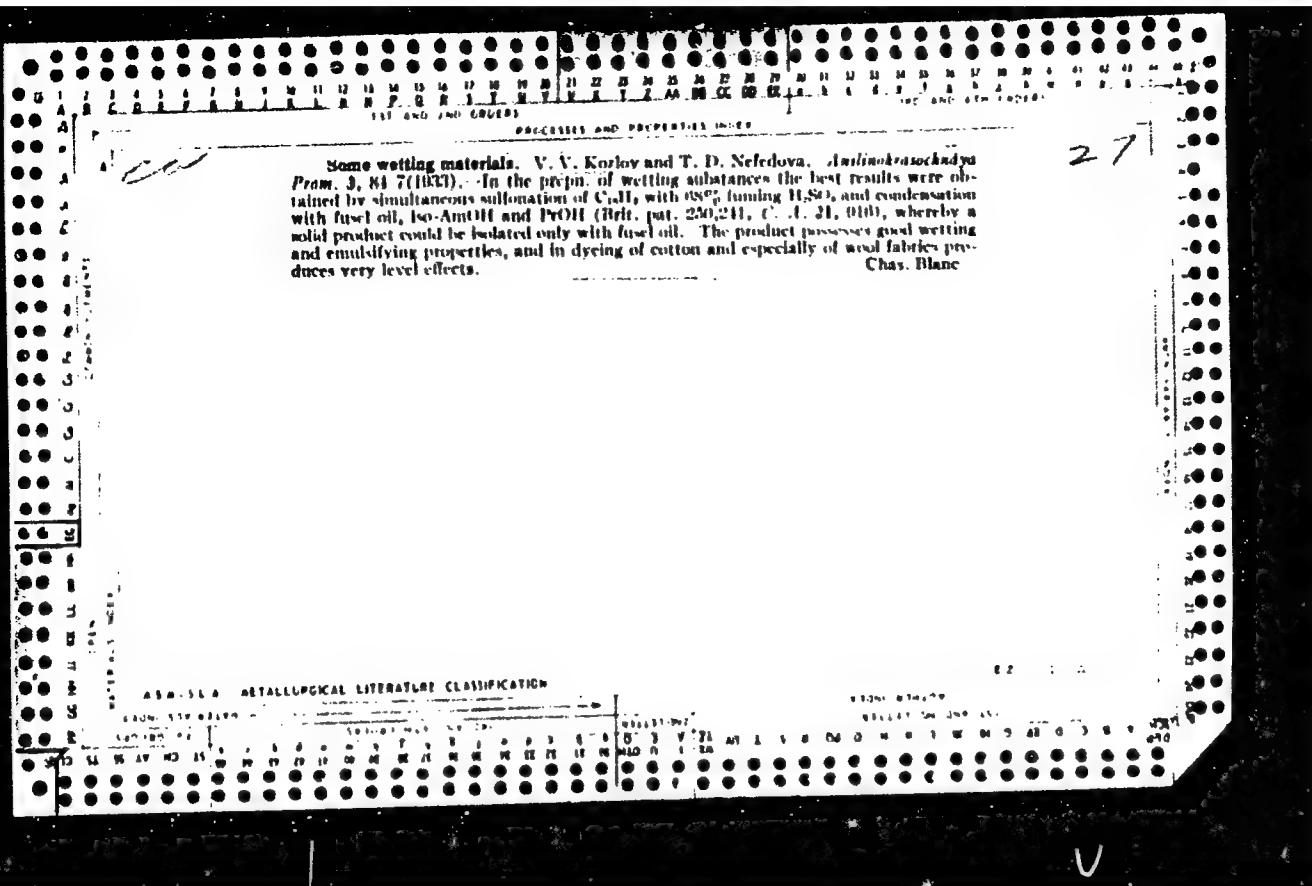
Unusual transpositions of internal organs in automobile accident
injuries. Sud. - med. ekspert. 6 no.3:51-52 Jl-S'63.
(MIRA 16:10)

1. Kafedra kriminalistiki (zav. - dotsent D.P.Rasseykin) Saratovskogo yuridicheskogo instituta.
(TRAFFIC ACCIDENT INVESTIGATION) (TRAUMATISM)

Adsorption of mineral dyes on wool fiber from aqueous suspensions. M. A. IL'INRELL AND V. V. KUZOV. *J. Russ. Phys.-Chem. Soc.*, 62, 665-721 (1930).—The object was to study the adsorption of mineral dyes (Pb_2O_3 , PbCrO_4 , $(\text{PbCrO}_4)_2\text{Pb}(\text{NH}_3)_6$, ultramarine) on woolen fabric which has been technically washed with soda and soap soaps. When woolen cloth is passed through an aq. suspension of mineral dyes the latter settle on the fiber in an even layer. The reaction is completed in the cold in 2-10 min. The resultant dyeing is substantially fast to water. The particular object of the expts. was to study quant. the stages of adsorption as functions of the concn., temp., time and diln. as well as adsorption on acidified cloth, the effect of electrolytes, and the degree of reversibility of the process. For the quant. studies, air-dried PbCrO_4 (0.37% H_2O) was employed and a cloth of 11.62% moisture (av.). For the qual. studies the other substances were employed. Adsorption proceeds better in ordinary H_2O than in distd. H_2O . The presence of mineral salts in ordinary water makes the adsorption complete and gives the dyeing a brighter shade. The adsorption increases rapidly with time at first, but gradually approaches a const. value; it shows a typical curve. As the concn. increases, the wt. adsorbed increases linearly and rapidly at first up to a certain point, then further increase abruptly ceases and the curve becomes flat. As temp. rises, the adsorption increases but slightly. As concn. of electrolyte increases, adsorption first decreases, then increases, then again decreases. As the diln. increases, the wt. of dyestuff adsorbed decreases but slowly. After triple washing the cloth retained 60% of the dyestuff initially adsorbed. As the concn. of acid increases, the quantity of acid adsorbed by the fabric increases up to a certain value, whereupon it becomes const. The dyed acidified fabric at once shows an increase of 13 to 25% in adsorbed wt. of dye over non-acidified fabric. However, as quantity of acid adsorbed increases, the wt. of dyestuff adsorbed does not increase very rapidly. D. K.

ABSTRACTS OF METALLURGICAL LITERATURE CLASSIFICATION

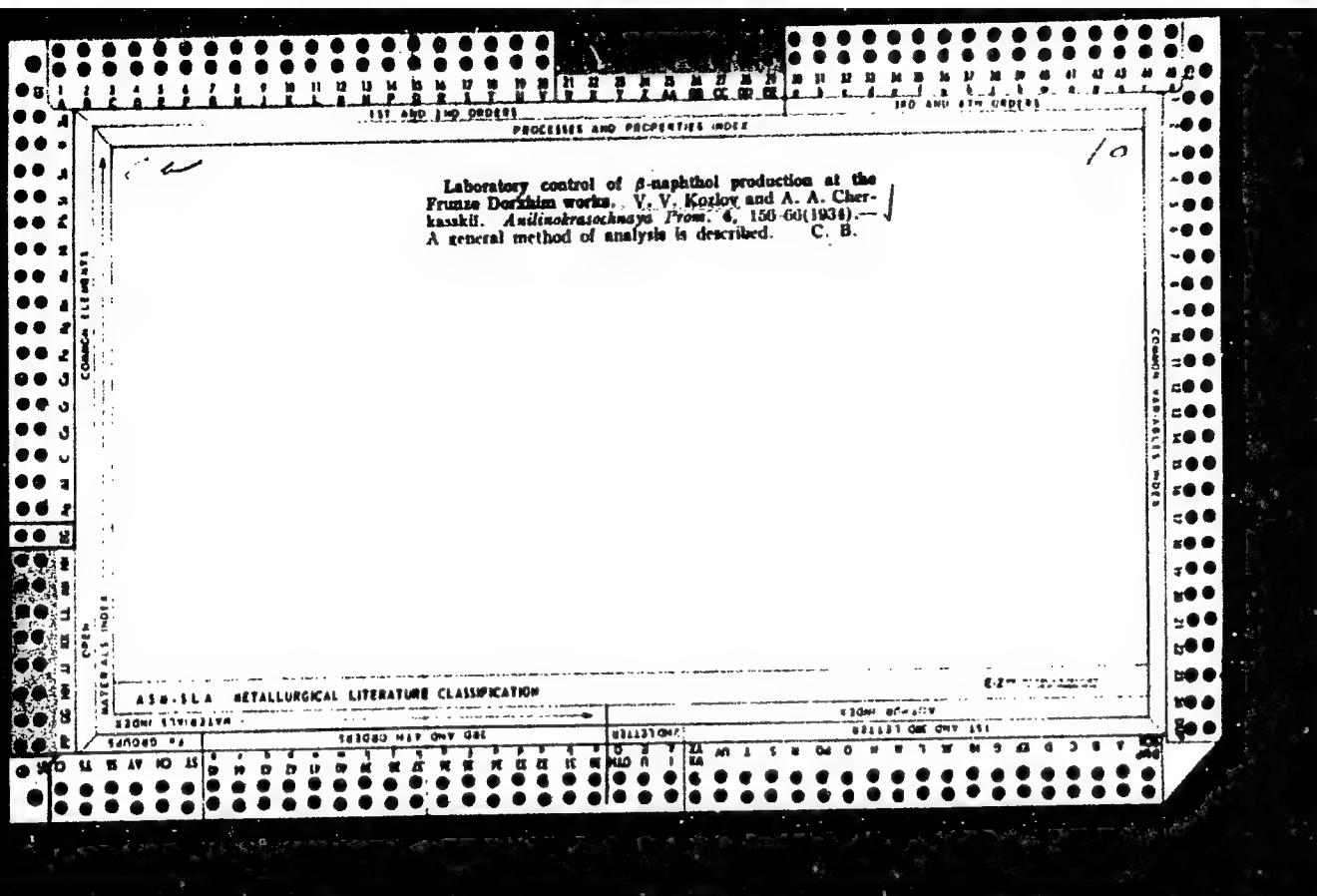
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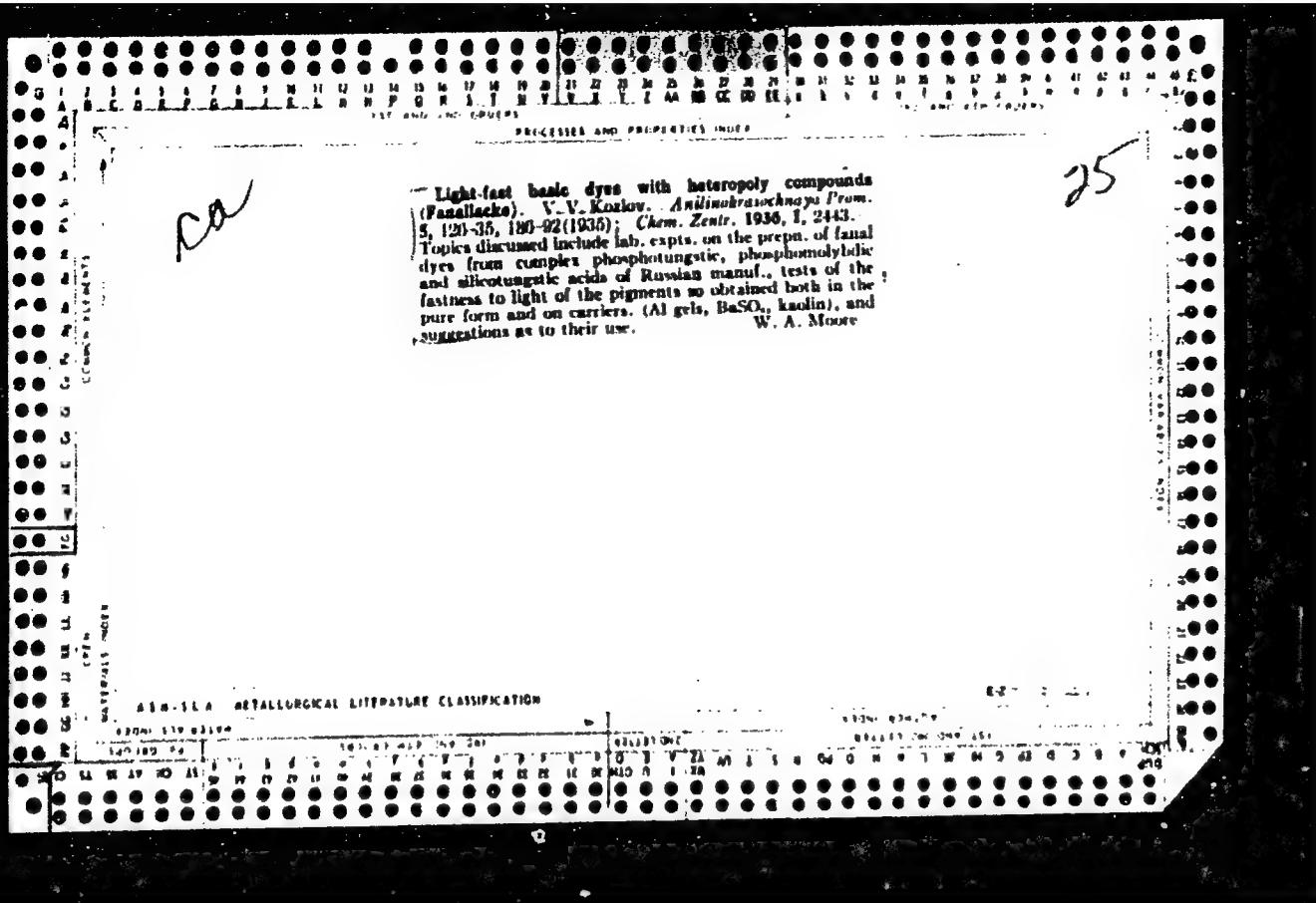


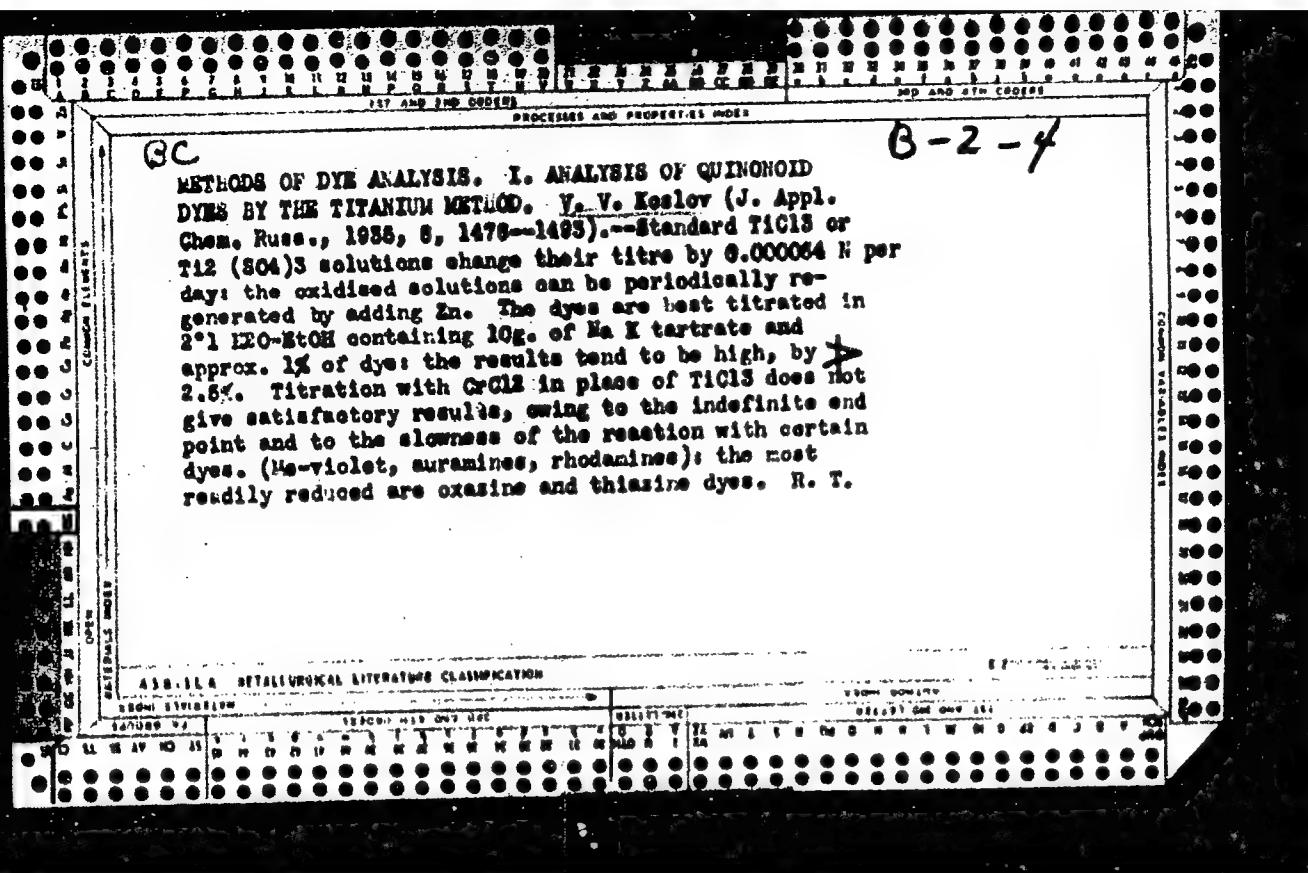
Metallo-ammino complex compounds of nitroaromatic acids of naphthalene and benzene. N. N. Vorob'ev and V. V. Kozlov, *J. Gen. Chem. (U. S. S. R.)* 3, 1917-29 (1933). By the interaction of nitroaromatic acids of CuII, and CuII, with aq. NH₃ in solns. of Cu and Ni salts, or by mixing the sol. Cu and Ni salt of these acids with aq. NH₃, there were ppptd. pure, cryst. metallo-ammino complex compds., insol. or nearly insol. in H₂O and common org. solvents (cf. Lipshitz, *C. A.* 14, 2300; 15, 2373; 17, 912). The structures of these complexes are Cu(NH₃)₅²⁺, R₁⁺ and Ni(NH₃)₅²⁺, R₁⁺ (cf. Chugayev, Werner, *et al.*). The ability of NO₂⁻ and halogen-substituted sulfonic acids to give such complex compds. is ascribed to their increased electron-*rich* character. The ability of 1,2-O-NO₂C₆H₄SO₃H (I) to give most easily these complexes shows the influence of the *o*-position of the NO₂ and SO₃H groups in the ring (cf. *C. A.* 27, 2410). The influence of the electron-*rich* radicals is further dis-

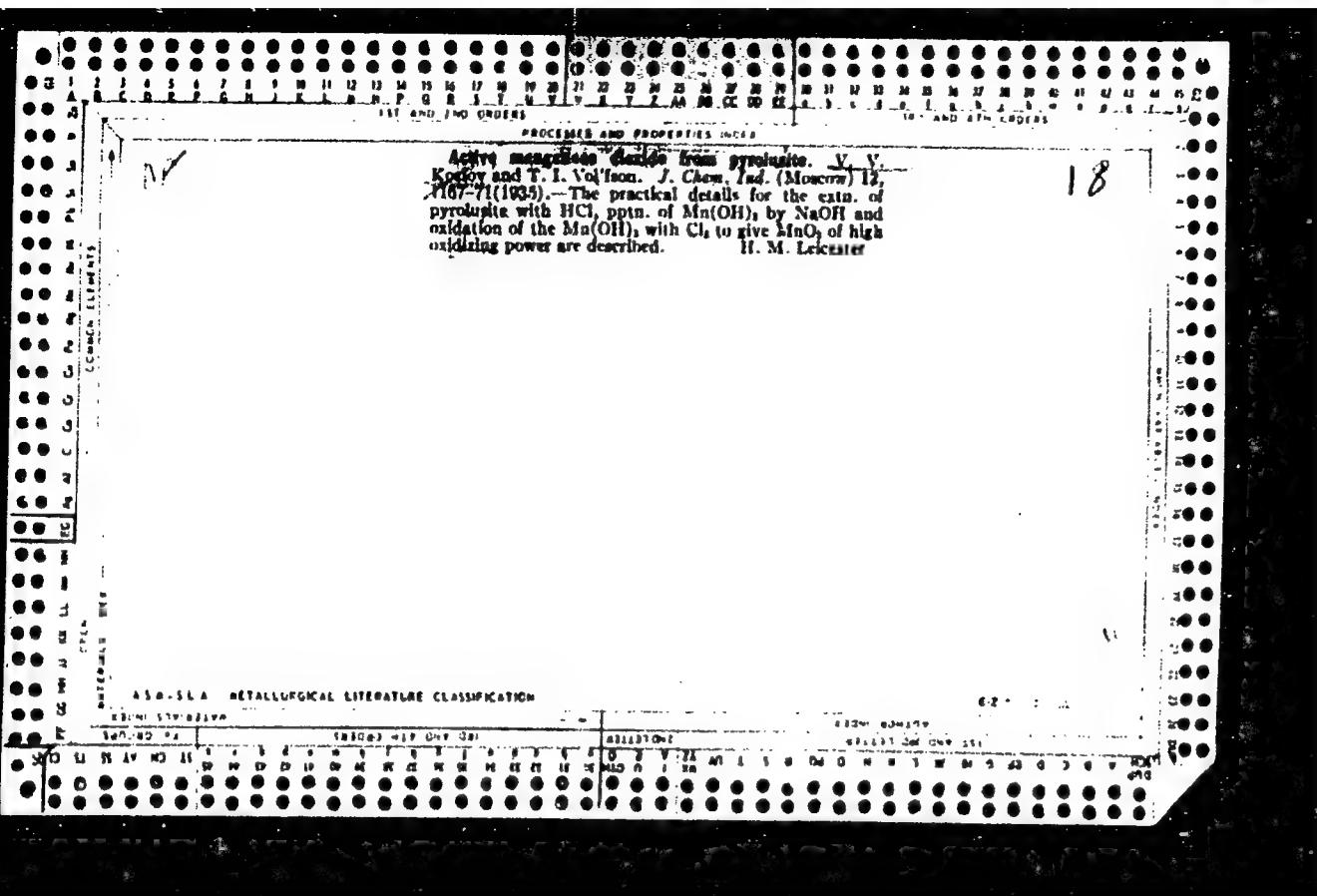
played by the inability of the sulfonic acids of $\text{Cu}(\text{II})$ and $\text{Co}(\text{II})$ to give such insol. complexes, while α - and β -anthraquinonesulfonic acids produce them. The sparingly sol. Cu and Ni salts of disulfone and nitrosulfonic acids of $\text{Cu}(\text{II})$ gave sol. NH_3 compds. Some dinitro-naphthalenesulfonic acids, such as 1,3,5-(O_2N) $\text{C}_6\text{H}_3\text{SO}_3\text{H}$, some β -nitrosulfonic acids (2,1- and 2,4,8-) and 1,3- and 1,3,5- O_2N $\text{C}_6\text{H}_3\text{SO}_3\text{H}$ produced no complex compds. $\text{p}-(\text{O}_2\text{N})\text{C}_6\text{H}_4\text{SO}_3\text{H}$ (II) gave no complex NH_3 compds. with Ni and Co salts, but produced the insol. Cu complex. The formation of some metallo-amino complexes with the sulfonic acids of $\alpha\text{-Cu}(\text{II})\text{NO}_3$ is so highly sensitive that the reaction can be used for detection and detn. of Cu and Ni and nitrosulfonic acids. All complex compds. prep'd. lose some NH_3 at room temp. and all the NH_3 at 110° . By substituting aromatic and aliphatic amines for NH_3 in the reaction, there were obtained ppts. of the salts of the corresponding $\alpha\text{-}(\text{O}_2\text{N})\text{C}_6\text{H}_3\text{SO}_3\text{H}$ and amines free from Cu and Ni . By addition of NH_4Cl or $(\text{NH}_4)_2\text{SO}_4$ to a soln. of Cu salt of an $\alpha\text{-NO}_2\text{C}_6\text{H}_3\text{SO}_3\text{H}$ or $\text{O}_2\text{N}\text{C}_6\text{H}_4\text{SO}_3\text{H}$ there were obtained cryst. wt. and ionized ppts. of the type $(\text{NH}_4)_2\text{Cu}(\text{I})_2$ (cf. Gmelin-Kraut, *Handbuch anorg. Chem.*, 3, 871). The sensitiveness of the following reactions is given in parts of Cu , Ni or Co in parts of H_2O . $(1,2\text{-O}_2\text{N}\text{C}_6\text{H}_3\text{SO}_3\text{H})_2\text{Cu}(\text{NH}_3)_2 \cdot 2\text{H}_2\text{O}$, m.

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Method of dye analysis. II. Analysis of quinonoid dyes by means of heteropoly-acids. III. Analysis of quinonoid dyes by means of permanganate titration. V. V. Kossov (J. Appl. Chem. Russ., 1936, 9, 669-677, 710-714; cf. B., 1936, 131).—II. Basic quinonoid dyes can be approx. determined by titration with silicotungstic acid (I); phosphotungstic and methylbisc acid (II) are less suitable. A more exact method consists in adding excess of (I) to the solution, filtering, drying the washed ppt. to const. wt. and igniting and weighing the residue. Acidic quinonoid dyes may be determined by ppt. with BaCl_2 in presence of (II), followed by ignition of the weighed dried ppt., but ppt. is less complete than in the case of basic dyes.

III. 1 ml. of a 1% solution of the dye is added to 500 ml. of H_2O and 20 ml. of H_2SO_4 , and the solution is titrated at 90° with 0.1N KMnO_4 (decolorization, followed by a pink coloration). 50 ml. of a 0.1% solution of the dye are shaken for 1 hr. with 10-12 g. of kaolin and 100 ml. of H_2O , 30 ml. of the filtrate are added to 470 ml. of H_2O and 20 ml. of H_2SO_4 , and the solution is titrated as above. The difference between the titrations corresponds with the content of dye in the given sample. The products of oxidation are benzoquinone, N_2CO_2 , and H_2O .

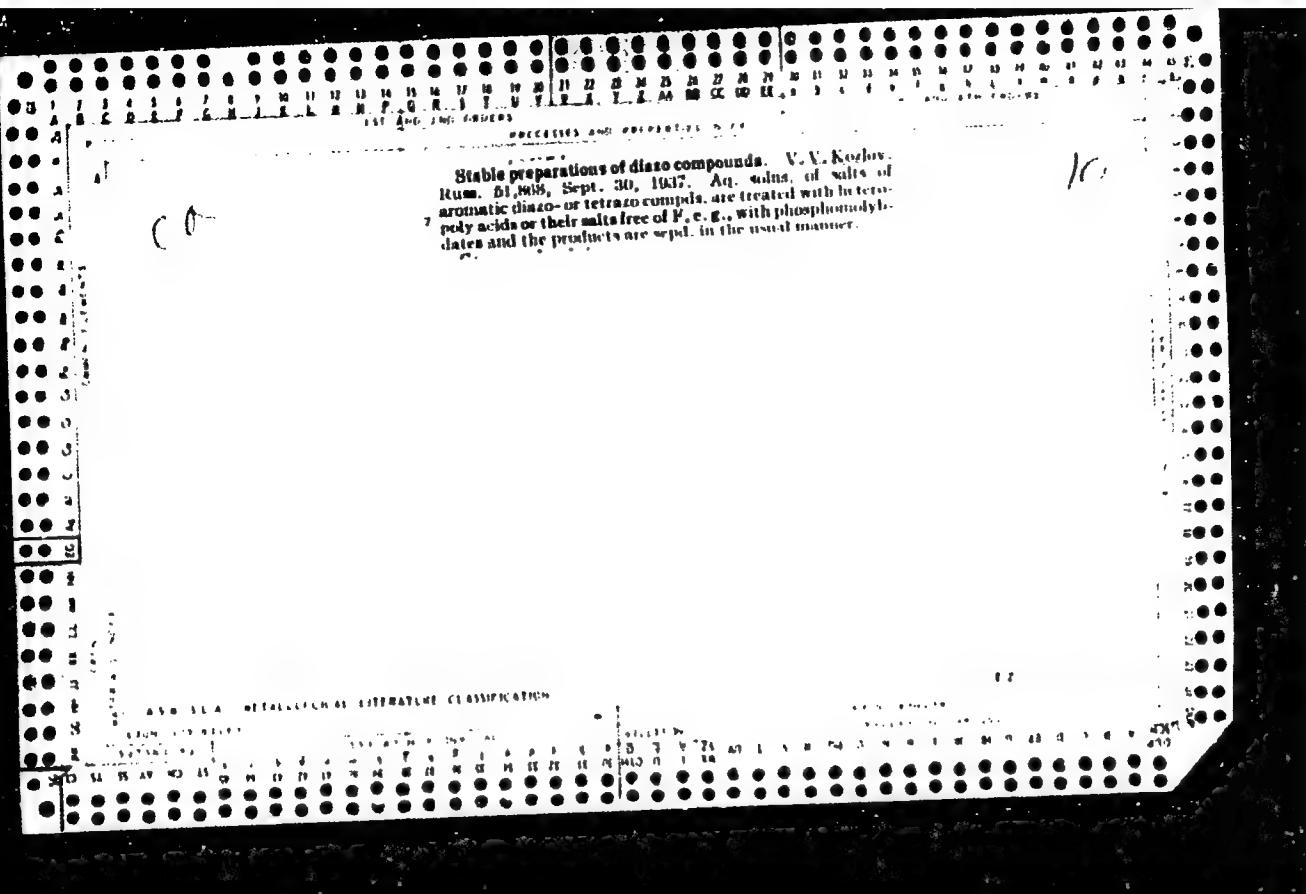
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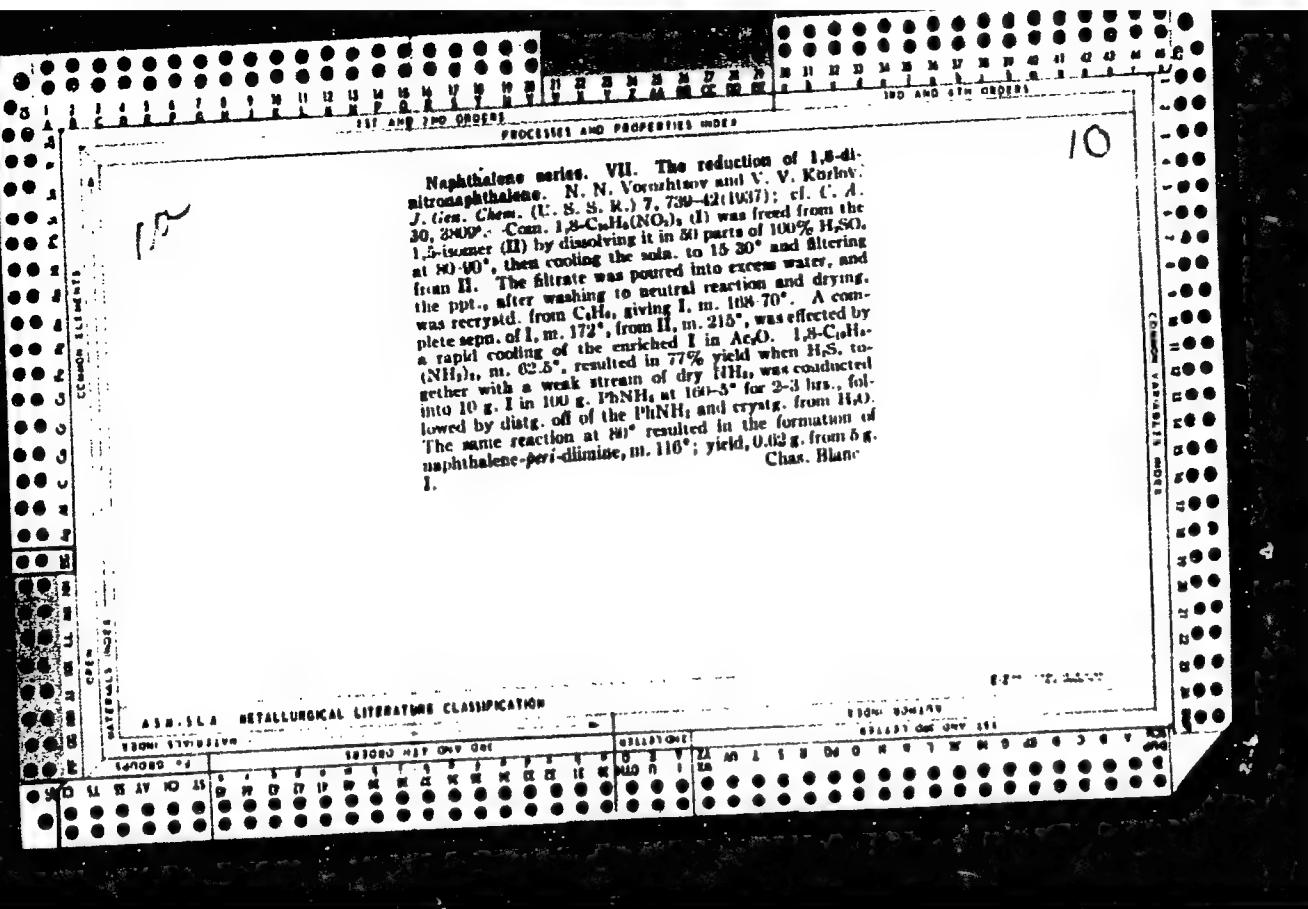
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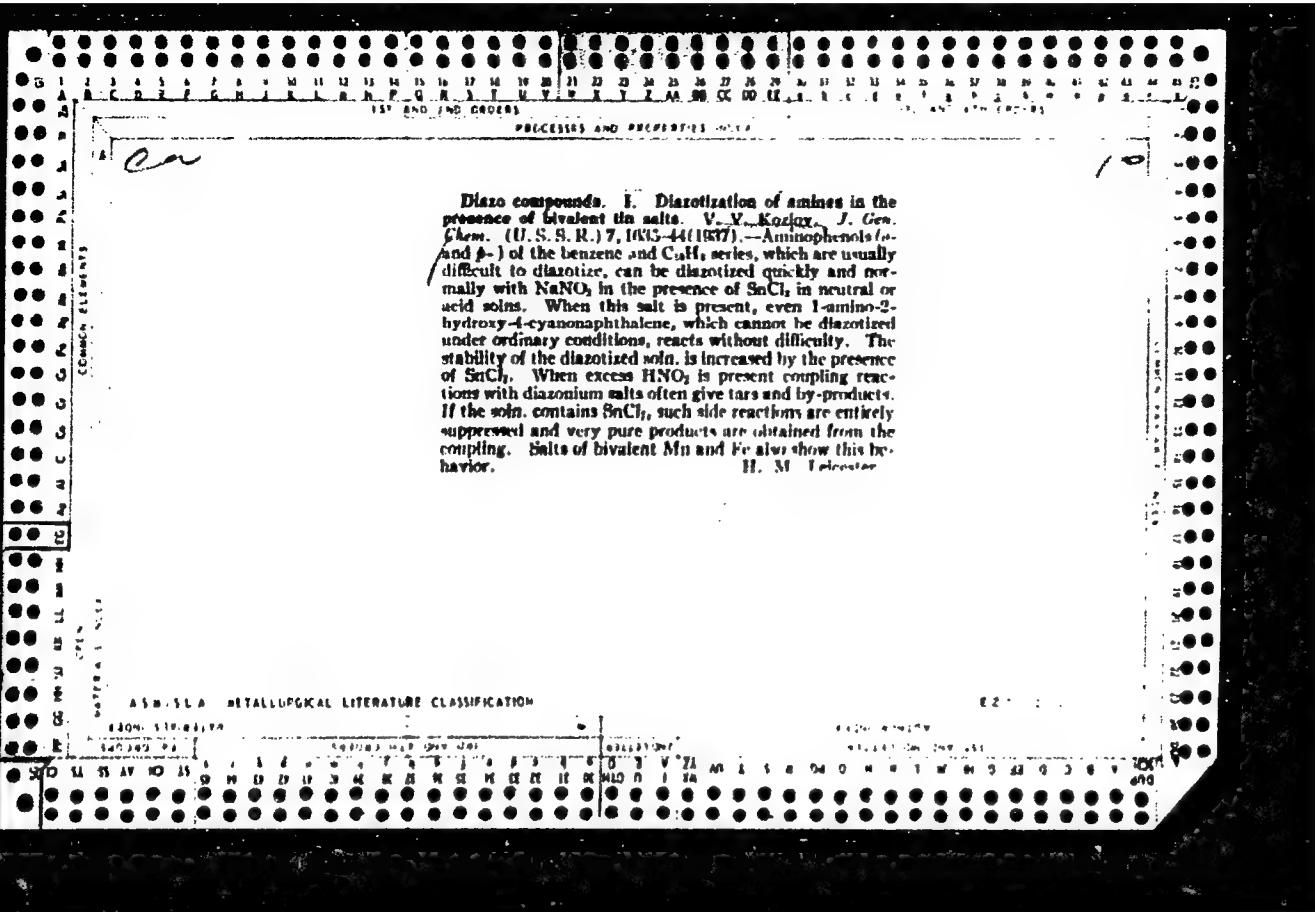
ASA-11A METALLURGICAL LITERATURE CLASSIFICATION

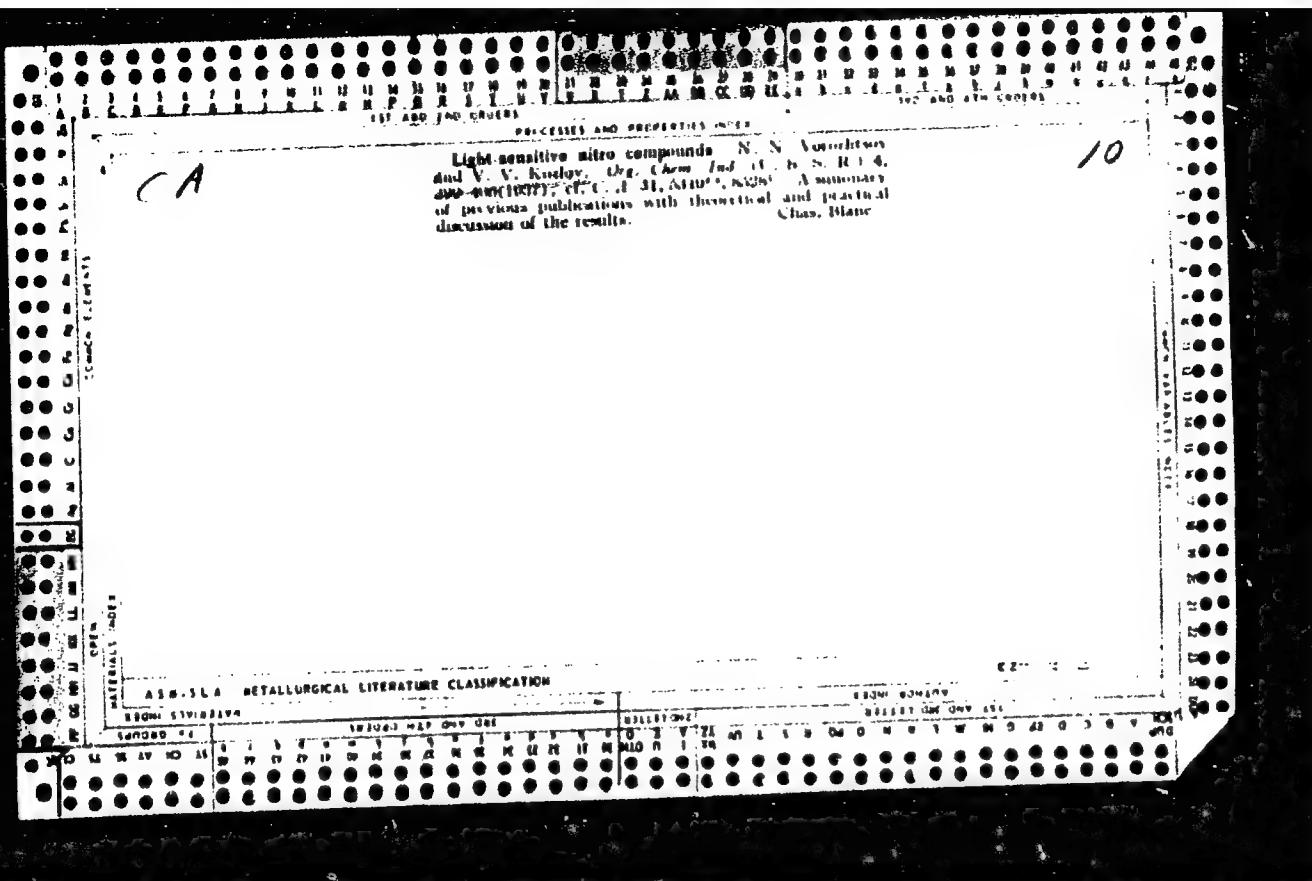
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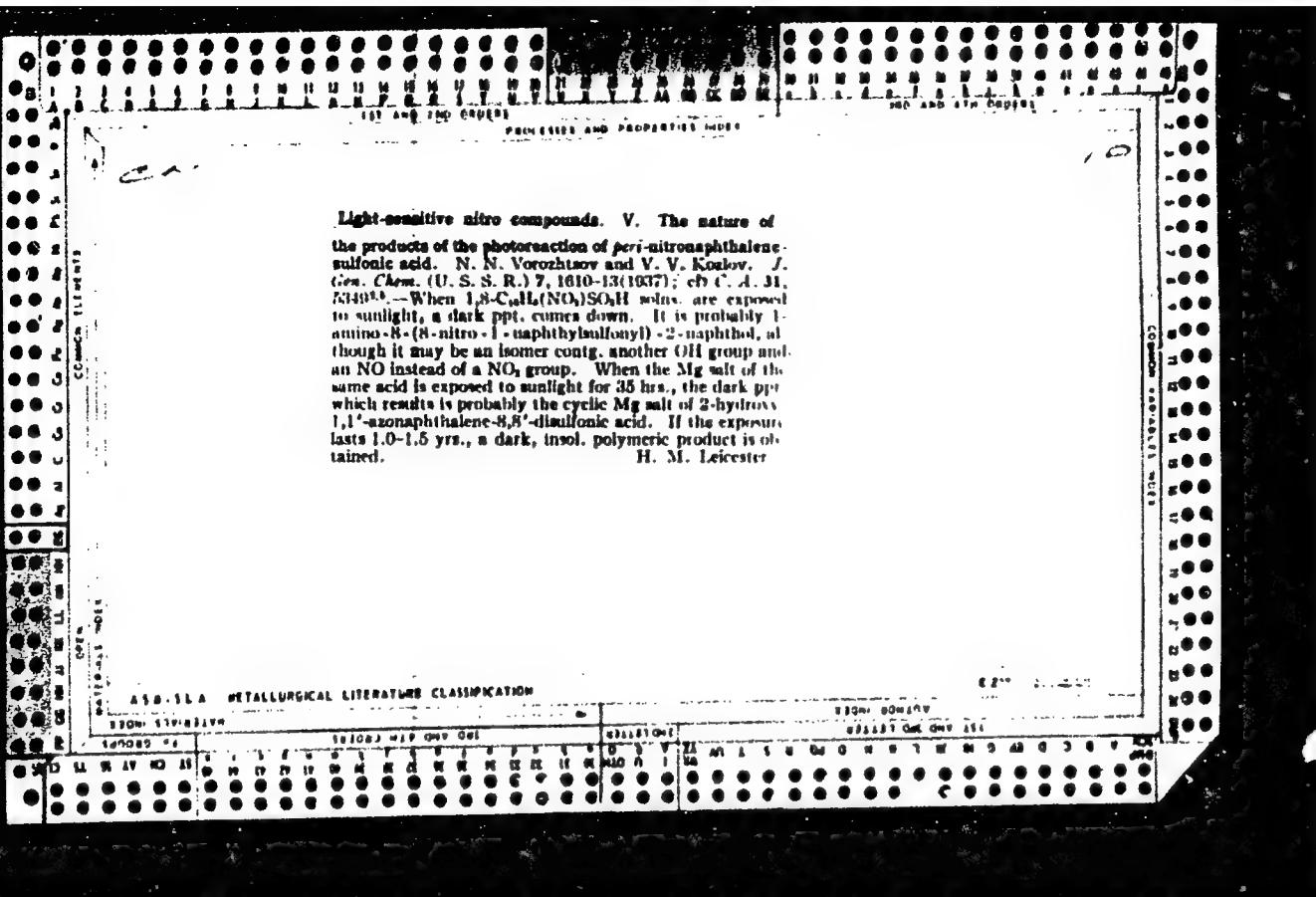
Light-sensitive nitro compounds. III. *meso*-Nitroanthracene-2-sulfonic acid. N. N. Vorontsova and V. V. Kostikov. *J. Gen. Chem. (U. S. S. R.)* 7, 729-38 (1937); cf. *C. A.* 31, 2441. The prep. of nitroanthracene-2-sulfonic acid (I) by the method of Barnett and Matthews (*C. A.* 18, 2128) does not succeed unless the int. is kept at 10-18° during filtration. I cannot be prep'd. by sulfonation of the nitroanthracene, since only anthranilonium is formed. Treatment of I with HCl or HClO gives a dichloride which is oxidized by CrO₃ to 9-chloroanthraquinone. This shows that I has the *meso*-structure. Reduction of I with Zn and H₂SO₄ gives the corresponding amine. When this is diazotized and heated with POCl₃ it gives a sulfone, m. 184-6°, which is hydrolyzed by NaOH to 9-anthranol-1-sulfonic acid. Thus, I is 9-nitroanthracene-1-sulfonic acid. Its Na, Cu, Hg²⁺, Ba, Pb, Ag and ferric salts are described. ***meso*-Nitroanthracene-2-sulfonic acid (II)** must also be ended during its prep., by the method of B. and M. It cannot be prep'd. by nitration of anthracene-2-sulfonic acid. Its Cu, Ba, Ag, Pb and ferrous salts are described. When I is exposed to light, it forms a dark compd. while under the same conditions, II gives a color-

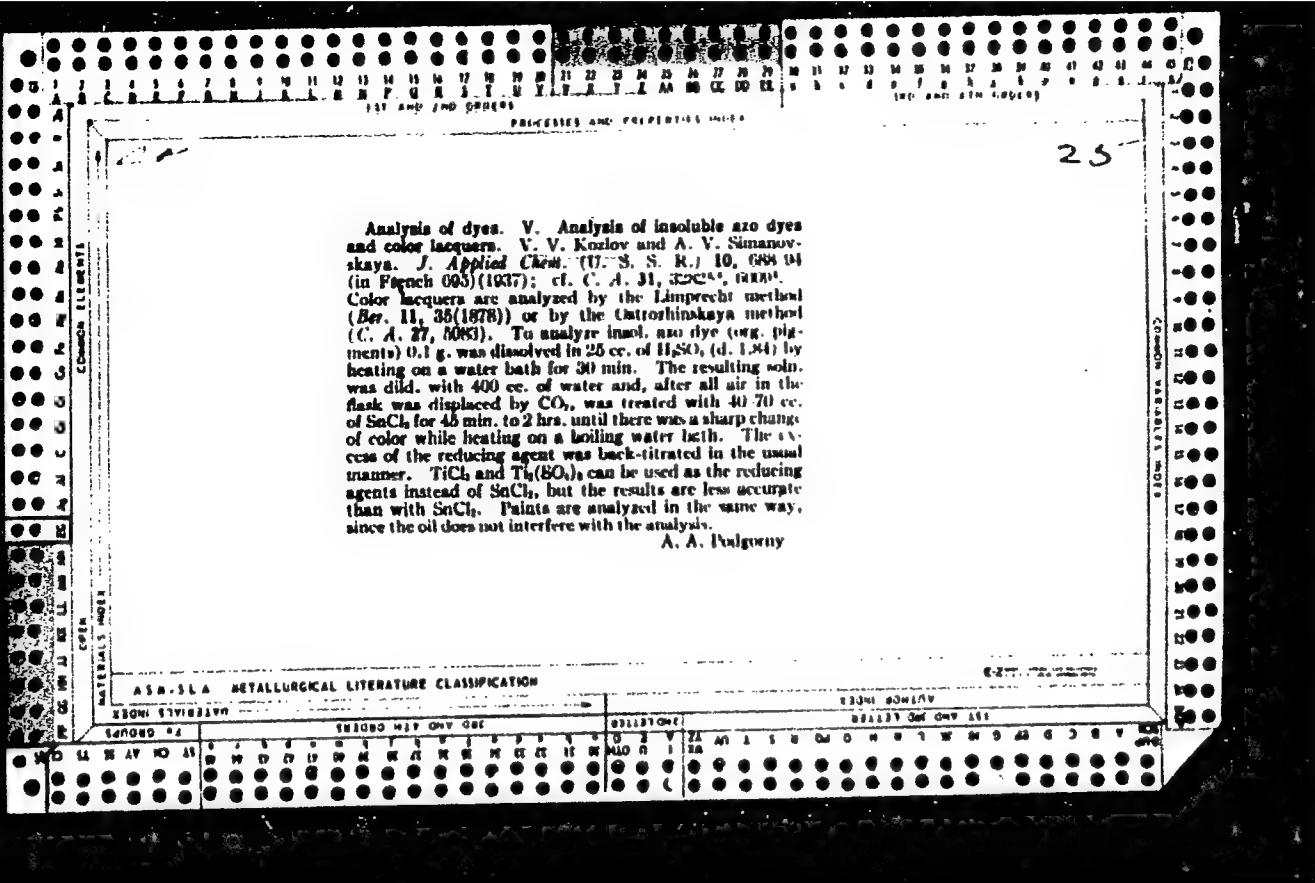
less compd. IV. The action of light on water solutions of nitroaromatic acids and on their color on wool and paper *ibid.*, 904-1044. Salts of 1-nitro-8-naphthalenesulfonic acid (I) in an *atm.*, are autocatalytically reduced by light to give dark compds. The reaction is faster in neutral or alk. solns. than in acid. The Mg salt is more active than the Na salt or free I. The change occurs better when the salt is deposited on wool than on silk or cotton. The presence of oxidants hinders the reaction, and hence it goes best in a N₂ or CO₂ atm.. The 1,8-isomer is more sensitive to light than its 1,2- or 1,7-isomers. In general, compds. in which NH₂ and SO₃H are closest to each other are the most sensitive. When the substituents are in the quinonoid (1,5 and 1,7) positions, the acid is less sensitive than when they are in the non-quinonoid (1,6 and 1,8) positions. Among the dinitrophenyl disulfides and dinitrodinaphthyl disulfides and the nitrobenzenesulfonic acids, the σ -isomers are the most sensitive, but none are as active as I. When paper soaked in these salts, and exposed to light is rinsed with dil. NaO₂C₆H₅ soln., the colors are set better than if pure H₂O is used. The salts of the *peri*-naphthalene compds. deserve the AgBr evaluations.

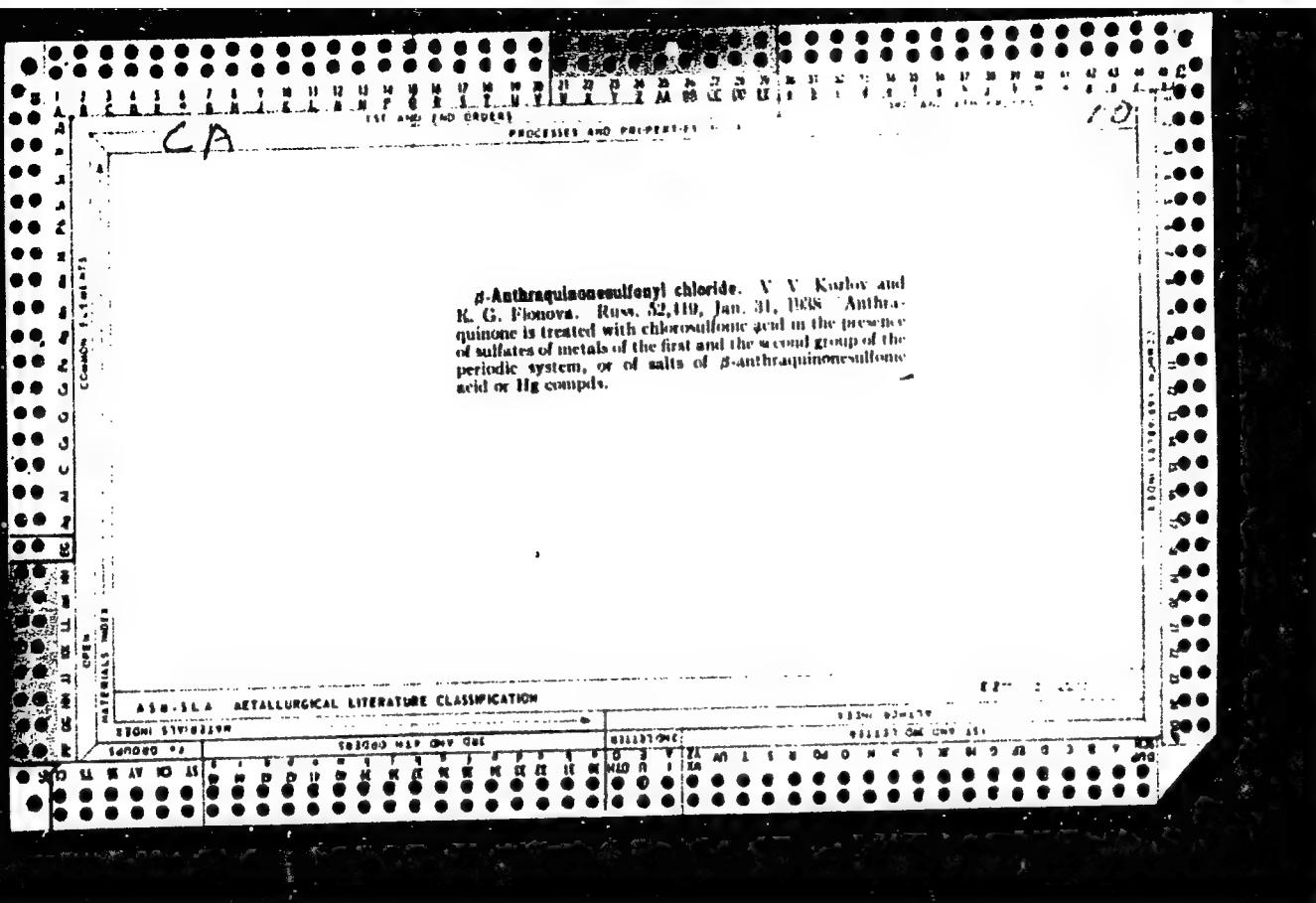
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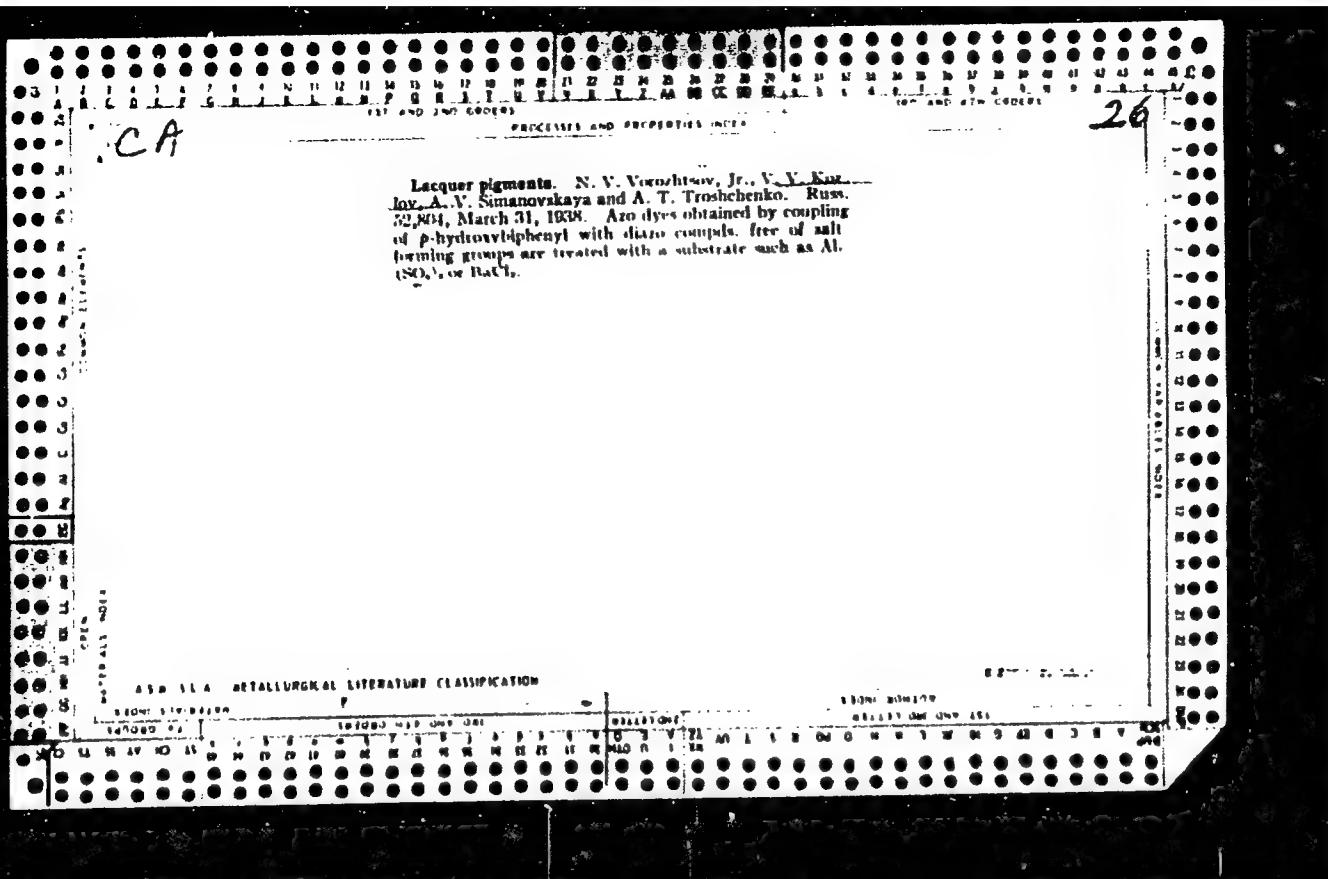
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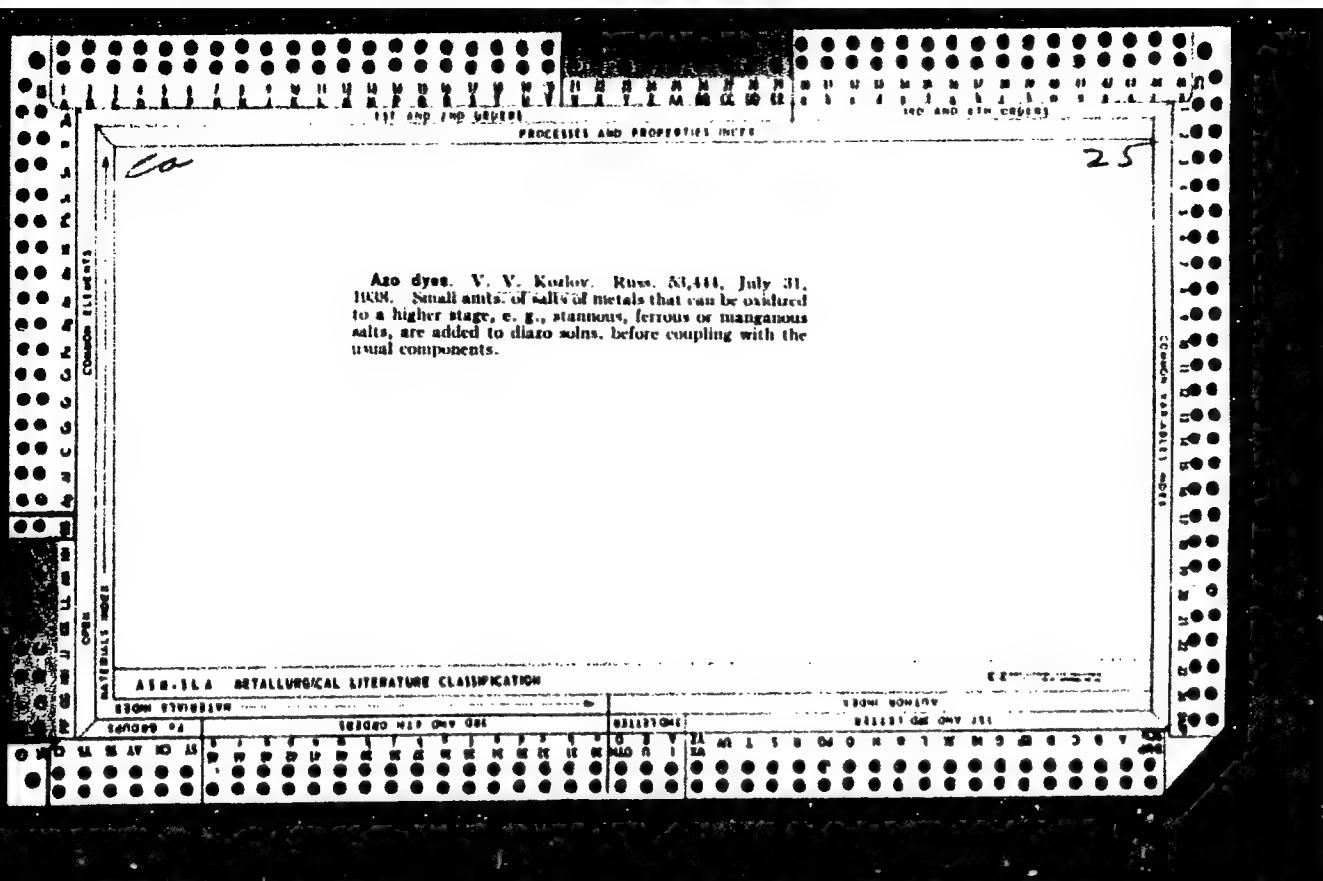
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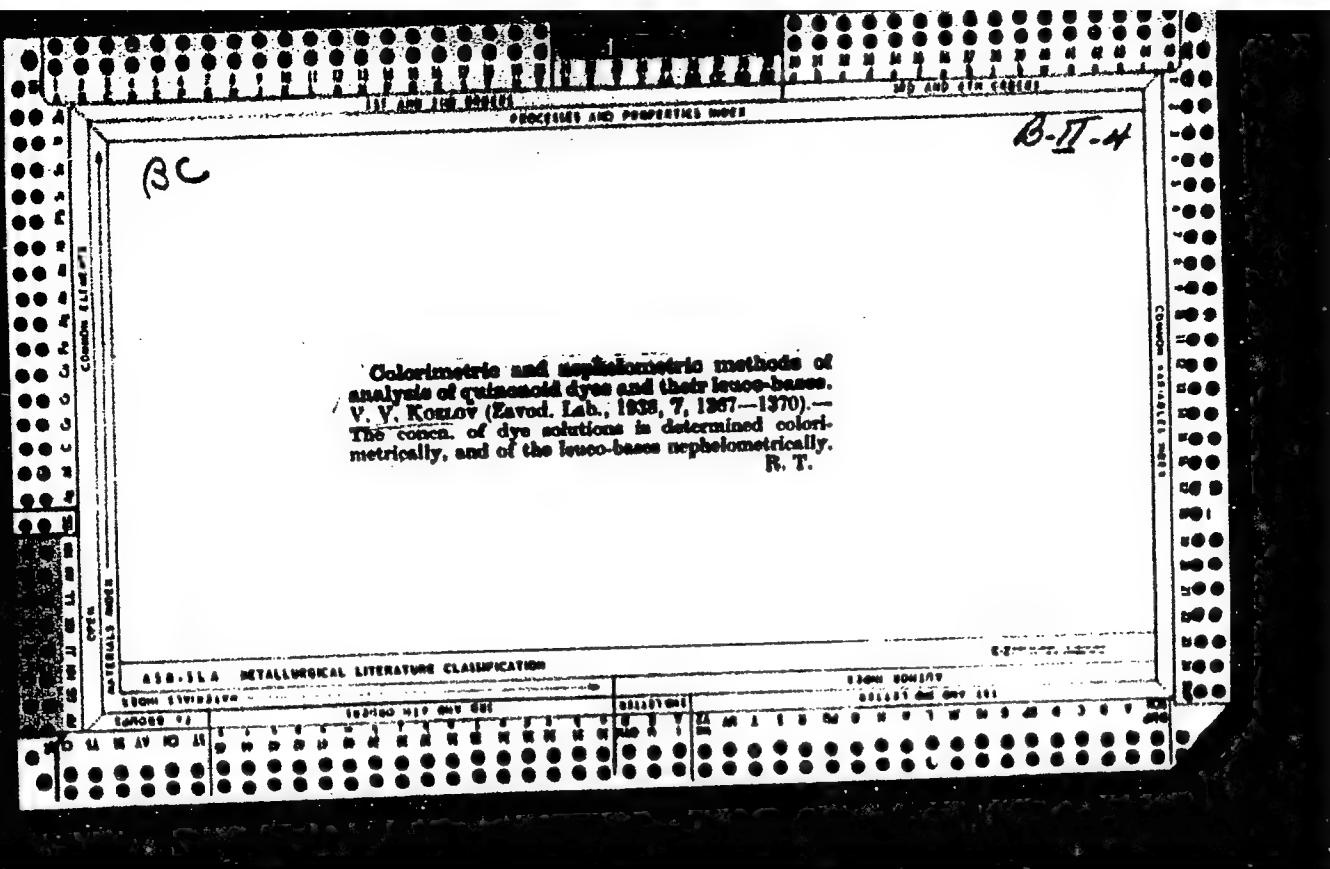


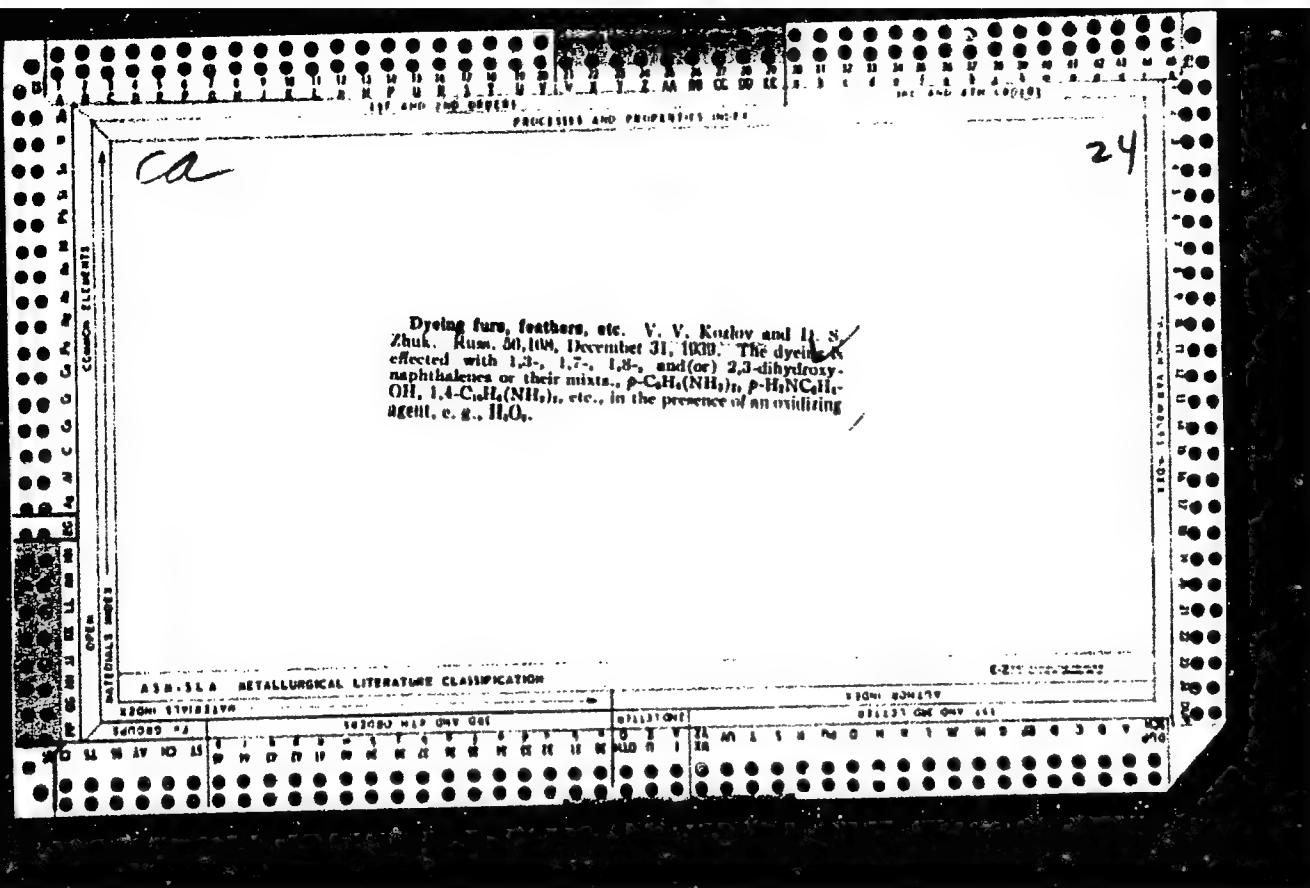


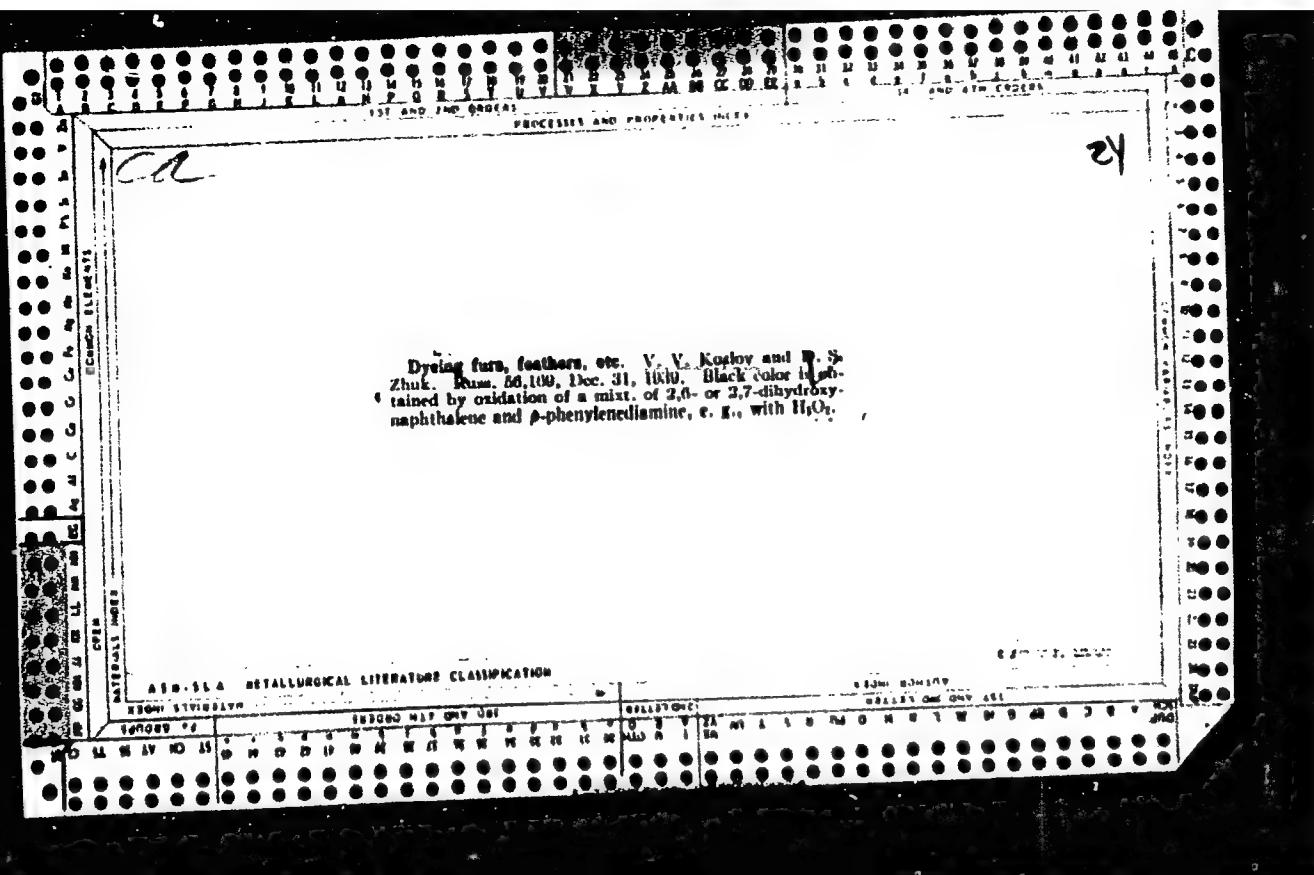












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PROCESSES AND PROPERTIES 1000

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Light-sensitive nitro compounds. VI. Some derivatives of nitronaphthalene with α - and β -substituents containing sulfur. N. N. Vorob'ev, V. V. Kub'y and I. S. Travkin. *J. Gen. Chem. (U. S. S. R.)* 9, 105-8 (1939); cf. *J. A. 32*, 4050. α -Nitro- β -naphthylamine (I) is best pept. by nitration of acet- β -naphthalide. When I undergoes the Gattermann reaction with SiCl_4 in the presence of H_2SO_4 , it gives 1 -nitronaphthalene-2-sulfonic acid (II), m. 119.5°. If HCl is used instead of H_2SO_4 in this reaction, the product is 1 -chloronaphthalene-2-sulfonic acid, m. 137.1°. II is moderately light-sensitive. Nitration of acet- α -naphthalide gives a mixt. of the 2- and 4-nitro derivs. These are best pept. by dissolving the mixt. in 6% KOH, dilg., adding the ppt. to dry PhNO_2 and passing in a stream of dry HCl . Under these conditions, 4-nitronaphthylamine is obtained. By the Gattermann reaction this gives 1 -nitronaphthalene-4-sulfonic acid, m. 132.5°, which is oxidized by H_2O_2 to the corresponding sulfone acid. Both these acids are weakly sensitive to light. 2 -Nitronaphthalene-1-sulfonic acid is pept. by the Sandmeyer reaction from 2-naphthylamine-1-sulfonic acid. It is a hygroscopic yellow powder whose Hg_2^+ and Ag^+ salts are insol. It is not sensitive to light.

U.S. GOVERNMENT.

Laboratory of Dyes and Pigments, Moscow Chem.-Tech. Inst. im. Meredelyeva
METALLURGICAL LITERATURE CLASSIFICATION

ASME.16.6 METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSED AND PREPARED INDEXNaphthalene series. VIII. Preparation of 4-nitro- α -

naphthylamine and its transformation into an azo dye.
 N. N. Vorozhtsov and V. V. Kozlov, *J. Gen. Chem. U.S.S.R.* 9, 587 (1938); *ibid.* 31, 5700 (1951).
 Oxidation of 4-nitro- α -naphthylamine with acid KMnO₄ at 50° gives 4-nitro- α -naphthylamine (I), m.p. 196°, yellow needles from alc. or concd. NH₄OH. Dissolved with 10% excess resorcinol in alc. soln. gives a deep blue soln. from which a dye, CuH₂N₂O₄, brown-black powder, is precip. with acid. The dye, unsuitable as an indicator, gives a incisive-red soln. in concd. H₂SO₄. The segn. of isomeric nitroquimes by cryst. from concd. NH₄OH is successfully applied to mixts. of 2 and 4-nitroanilines and of 8- and 5-nitro- α -naphthylamines.

John Livak

ASR-SLA METALLURGICAL LITERATURE CLASSIFICATION

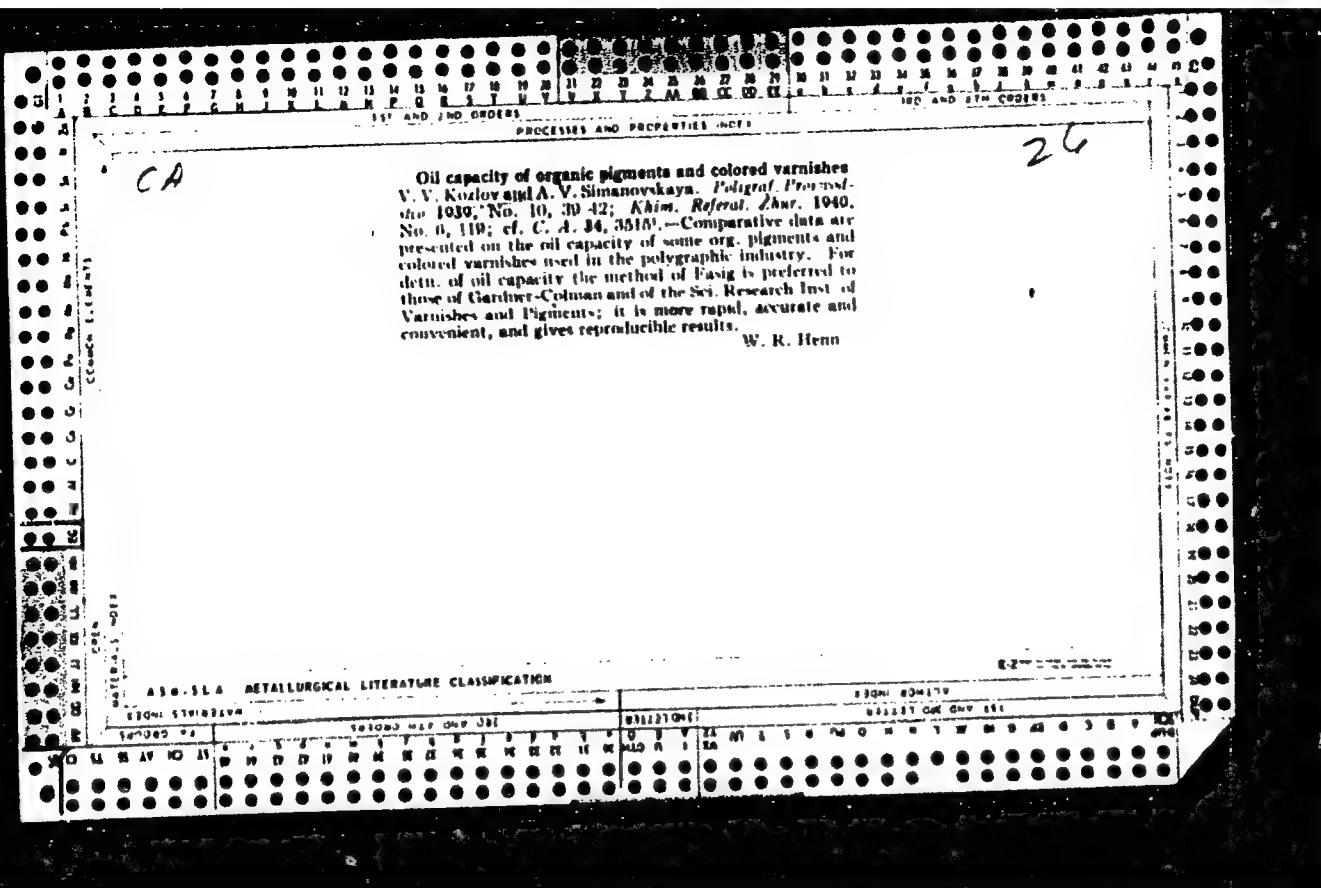
PROCESSES AND PROPERTIES INDEX

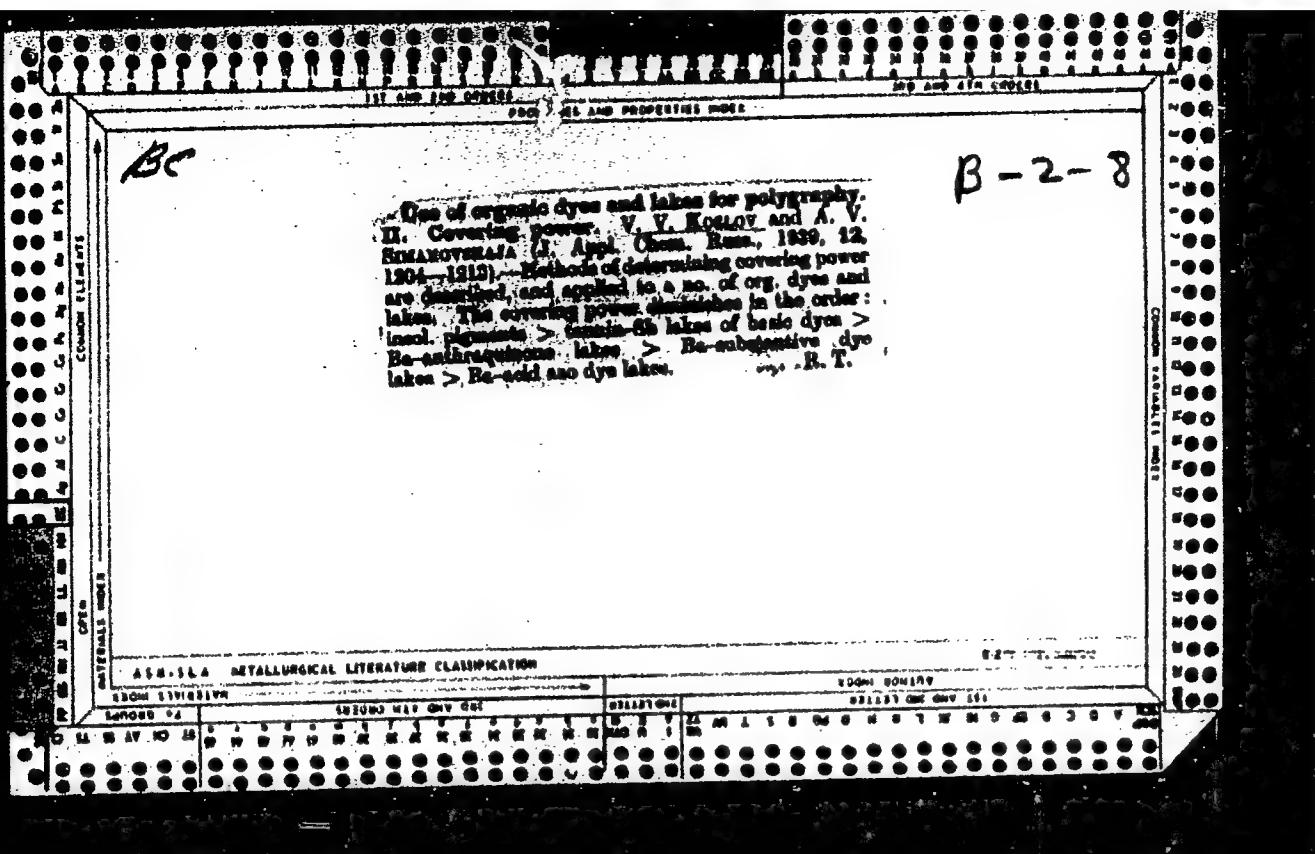
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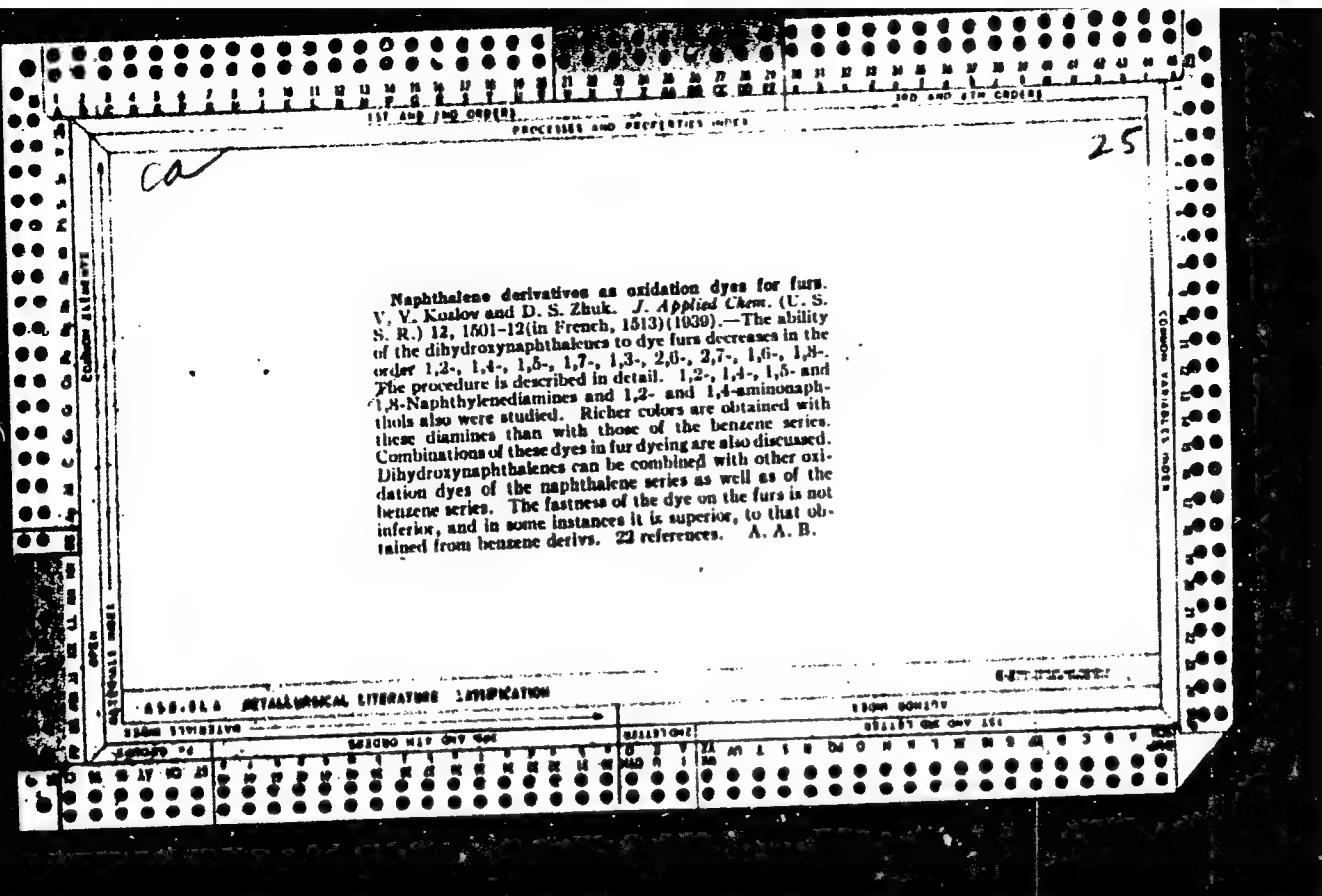
Chemistry of naphthalene derivatives. I. Reaction of naphthalene-1,4-dicarboxylic acids with alkali chlorates. V. V. Kuday and D. G. Talybov. *J. Gen. Chem. (U. S. S. R.)* 9, 1827-33 (1930).—The reaction of 1-Cu₂Cl₃SC₂O₄Na in dil. HCl with KClO₃ at the boiling temp. gave chiefly 1,6-C₆H₄Cl₂ and some 1,5-, 1,8- and 1,7-isomers. 2-C₆H₅Na under these conditions gave about 35% 2,6-C₆H₄Cl₂. The reactions are accompanied by partial oxidation of the di-Cl compds. to 6-chloro-1,4-naphthoquinone, m. 106-7°. The formation of di-Cl derivs. does not take place at lower temps. (80-90°). Chav. Blanc

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Lab. Organic Intermediate Products + Dyes. Moscow Chem-Tech. Inst
MINISTRY OF METALLURGICAL LITERATURE CLASSIFICATION
im. Mendeleyev





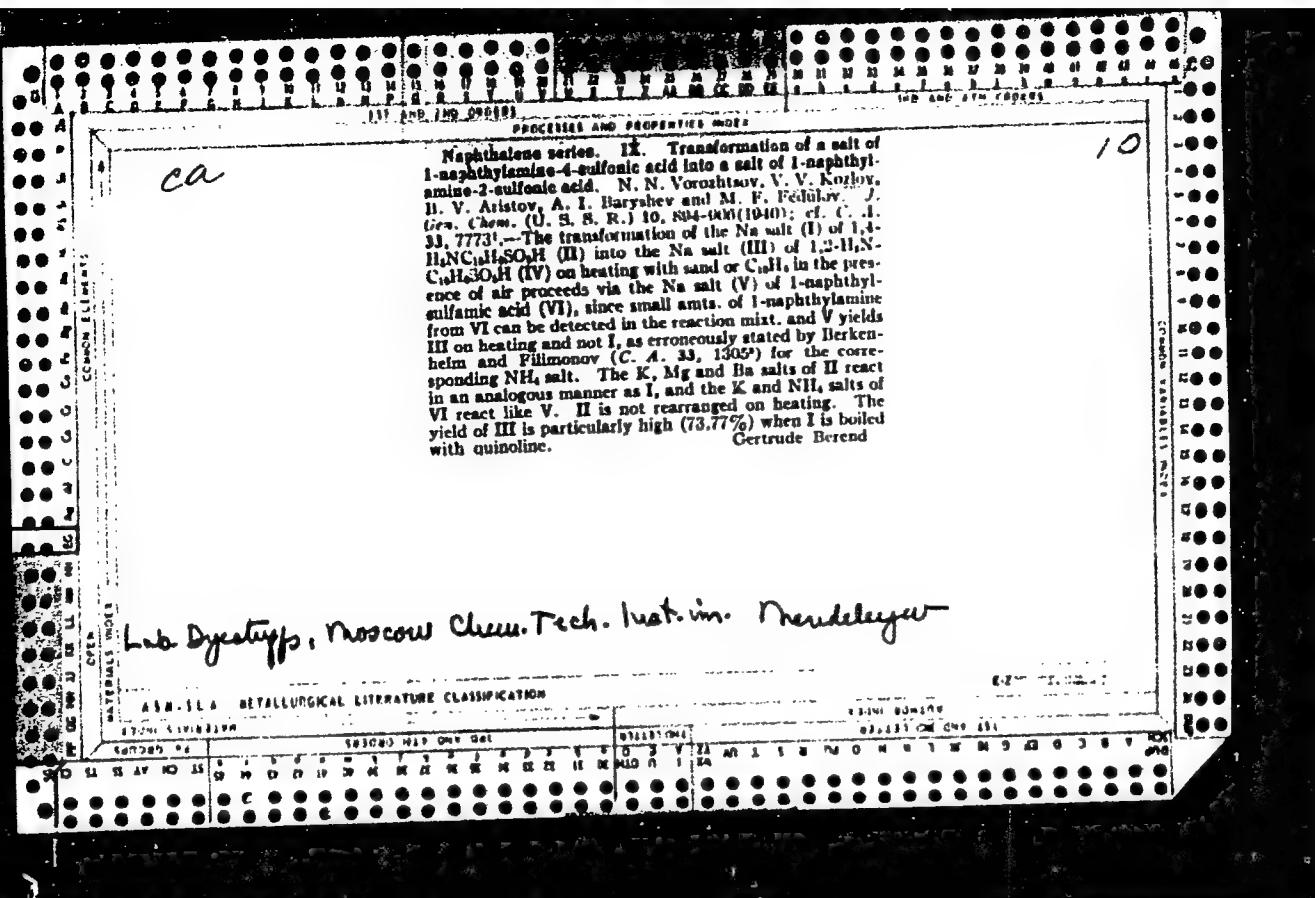


Diazo compounds. II. The interaction of diazo compounds with complex heteropoly acids. V. V. Koslov and H. N. Arkhipov. *J. Gen. Chem. (U. S. S. R.)* 10, 685-96 (1940); cf. *C. A.* 31, 8317.—Previously it was shown (Russ. pat. 51,808; *C. A.* 33, 8324) that aromatic diazonium salts react with heteropoly acids and their salts free from F to form water-insol. complex diazo compds. Addnl. data show that the scheme of the quant. reaction with phosphomolybdic acid (I) (and with phosphotungstic acid) is: $3 \text{ArN}_2^+ + \text{L}_x\text{H}_2\text{O} = [\text{ArN}_2]_3\text{H}_2\text{P}(\text{Mo}_3\text{O}_10)_x + x\text{H}_2\text{O} + 3 \text{HX}$. Silicotungstic acid reacts with 4 mols. ArN_2X . The complex diazo compds., derived from heterocyclic nitroquinoxalines, toluidines and anilidines, are insol. in common org. solvents and are sol. in cold acetin, dil. glycerol and 10% NaOH and in hot $\text{C}_2\text{H}_5\text{N}$ and Me_2CO . They show greater stability than the common diazo compds. to the action of elevated temps. (80-90°), prolonged storage (over 1 year) and shock by blow. They burn in a free flame without a flash. These preps. (freshly prep'd. or dried) react in an aq. suspension with azo components to give dyes of the same color and tinctorial strength as the corresponding simple diazonium salts. Cu and its salts catalyze the decomp. of the complex diazo compds. with

the cleavage of the heteropoly acid and the formation of corresponding phenols. Thus, the derivs. of σ -O₂N₂C₆H₄NH₂ and σ -anisidine gave, resp., 40% σ -O₂N₂C₆H₄OH and 70% guaiacol. III. Complex diazo compounds of phenylenediamines with heteropoly acids and certain dyes derived from them. V. V. Kuzlov, B. N. Arkhipov and A. V. Simanovskaya. *Ibid.* 697-704.—The isomeric $\text{CaH}_4(\text{NH}_3)_2$ react in HCl soln. with heteropoly acids to give sparingly sol. complex salts of the type: $[\text{CaH}_4(\text{NH}_3)_2]_n \cdot [\text{H}_2\text{P}(\text{Mo}_3\text{O}_10)_2]$, $[\text{CaH}_4(\text{NH}_3)_2]_n \cdot [\text{H}_2\text{P}(\text{W}_3\text{O}_10)_2]$ and $[\text{CaH}_4(\text{NH}_3)_2]_n \cdot \text{H}_2\text{Si}(\text{W}_3\text{O}_10)_2$. The complex salts, derived from m - and p -isomers, react with NaNO₂ in HCl soln. to give 98-100% of monodiazot. compds. of the type: $\text{H}_2\text{P}(\text{Mo}_3\text{O}_10)_2 \cdot \text{H}_2\text{NCH}_2\text{NHNH}_2$, $\text{H}_2\text{P}(\text{W}_3\text{O}_10)_2 \cdot \text{H}_2\text{NCH}_2\text{NHNH}_2$ and $\text{H}_2\text{Si}(\text{W}_3\text{O}_10)_2 \cdot \text{H}_2\text{NCH}_2\text{NHNH}_2$. If NaNO₂ is used in excess of 1 mol., the yellow or pale-yellow monodiazot. products become discolored by partial decompn. Analytical and exptl. evidence showed that only 1 NH₂ group in $\text{CaH}_4(\text{NH}_3)_2$ is diazotized. Thus, the decompn. of the diazo products with boiling dil. H₂SO₄ and the treatment of the decompn. residue with 20% NaOH gave no resorcinol and hydroquinone, resp., but the corresponding m - and p -H₂N₂CaH₄OH, identified as di- H_2N derivs. In solv. and stability these monodiazot. compds. are similar to the complex diazo compds. described in part II above. When coupled with 2-C₆H₅OH, they give up to 95% of brown azo dyes of good fastness. When treated with 5-10% NaOH, these dyes are decompd.: $\text{H}_2\text{P}(\text{Mo}_3\text{O}_10)_2 \cdot [\text{H}_2\text{NCH}_2\text{N}_2\text{CaH}_4\text{OH}]_n + n\text{NaOH} \rightarrow 3\text{H}_2\text{NCH}_2\text{N}_2\text{CaH}_4\text{OH} + n\text{H}_2\text{O} + \text{Na}_2\text{PO}_4 + \text{Na}_2\text{MoO}_4$ (cf. C. A. 31, 6009). σ -CaH₄(NH₃)₂ reacts also with heteropoly acids, but the resulting cryst. complex salts form with HNO₂ some complex compds. incapable of coupling reaction with aro. components, and probably are azimides of the type $[\text{CaH}_4(\text{NH}_3)_2]_n \cdot \text{H}_2\text{P}(\text{Mo}_3\text{O}_10)_2$, $[\text{CaH}_4(\text{NH}_3)_2]_n \cdot \text{H}_2\text{Si}(\text{W}_3\text{O}_10)_2$ gives analogous reactions. C. B.

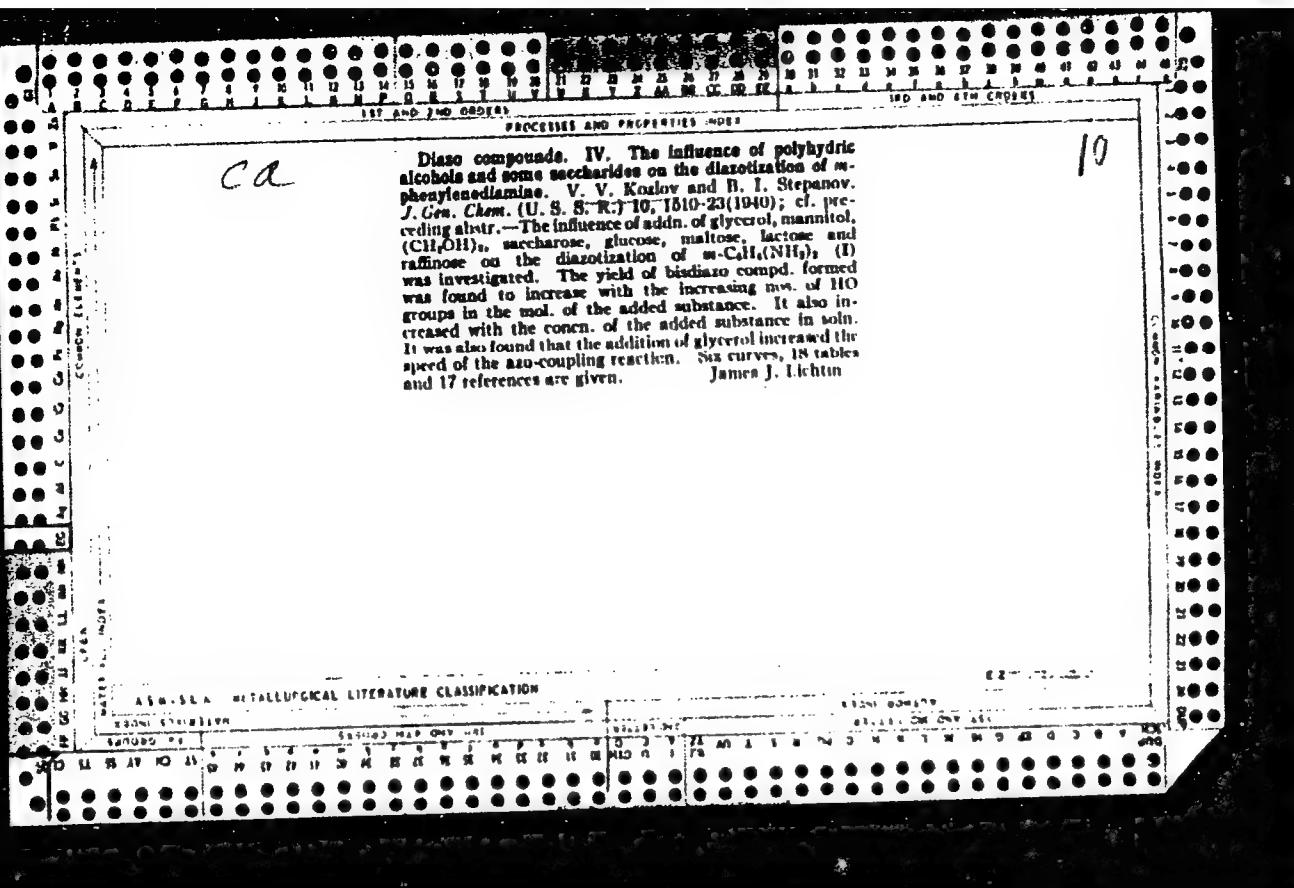
APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000825910C



The **thianthrene series.** I. **Thianthrene-3 sulfone acid disulfone.** V. V. Kudoy, R. P. Frukhtman and O. M. Shemyakina. *J. Gen. Chem. (U. S. S. R.)* 10, 1077-88 (1940). $\text{--S}_2\text{Cl}_2$, CuI , and AlCl_3 give 78.5% thianthrene disulfone (I), m. 321°. This is very inert toward sulfonating agents, and only when heated for 2 hrs. at 140° with a large excess of 62% oleum in a sealed tube does it give 38% of a monosulfonic acid, isolated as the K salt (II). No other compds. can be obtained. The NH_2 , Mg , Na , K , Cu , Zn , Al , Fe , Pb and Ag salts are described. When II is refluxed for 5 hrs. with PCl_5 at 100° in the presence of a little PbCl_2 , it gives 77% of the **salicyl chloride** (III), decamps., 194°. When III is heated with H_2O in sealed tube, it gives a very hygroscopic acid. III and NH_2 give the corresponding acid amide, m. 178°. When III is ground with PCl_5 and some PbCl_2 and heated for 5 hrs. at 180°, it gives 78% of a **chlorothianthrene disulfone**, m. 120°, which is identical with the compd. prep'd. by oxidizing β -chlorothianthrene with CrO_3 in HOAc . Fusion of II with NaOH gives $\text{PhOCH}_2\text{CH}_2\text{NaOCH}_2\text{CH}_2\text{Ph}$. These facts prove that sulfonation of I occurs in the β -position. H. M. L.

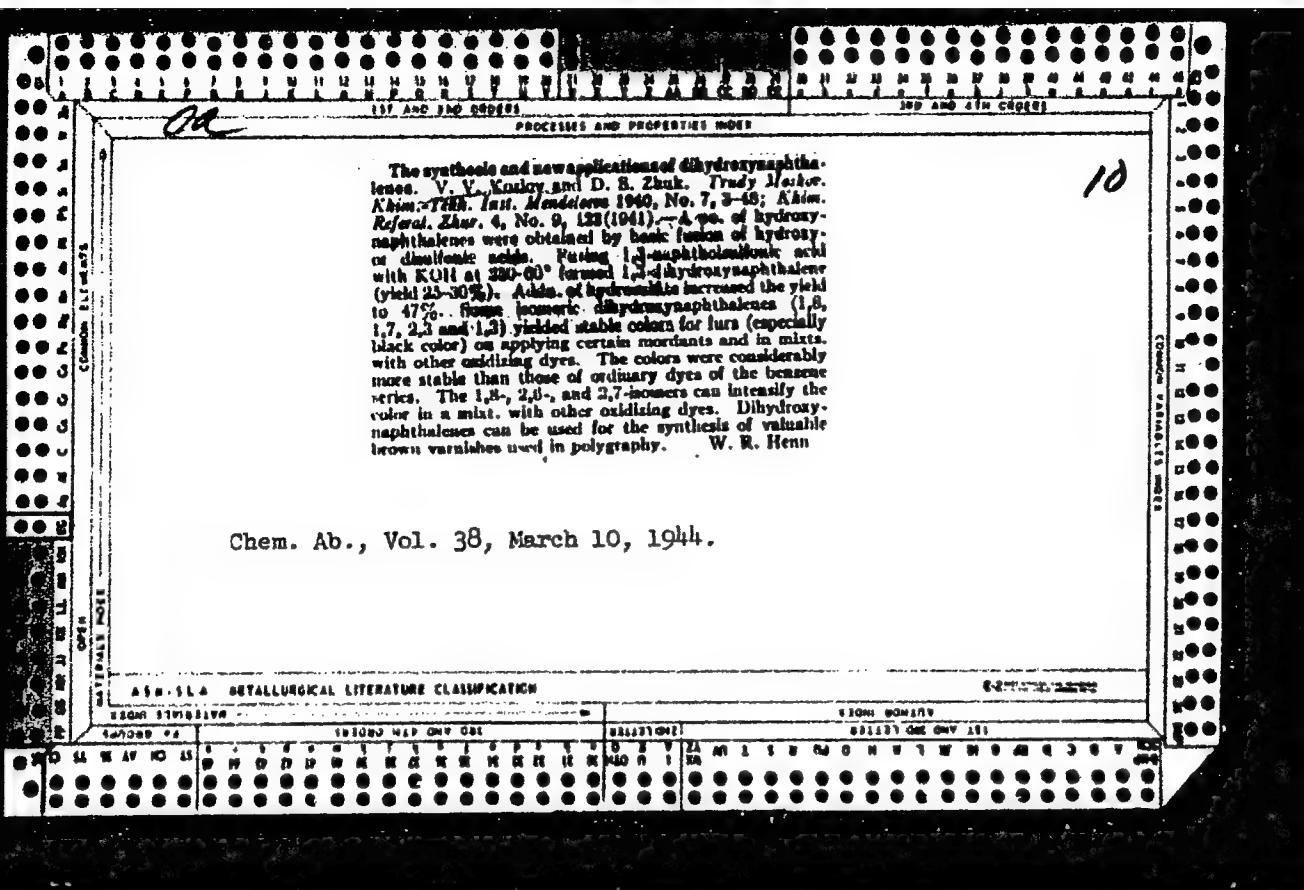
APPROVED FOR RELEASE: Monday, July 31, 2000 **CIA-RDP86-00513R000825910C**

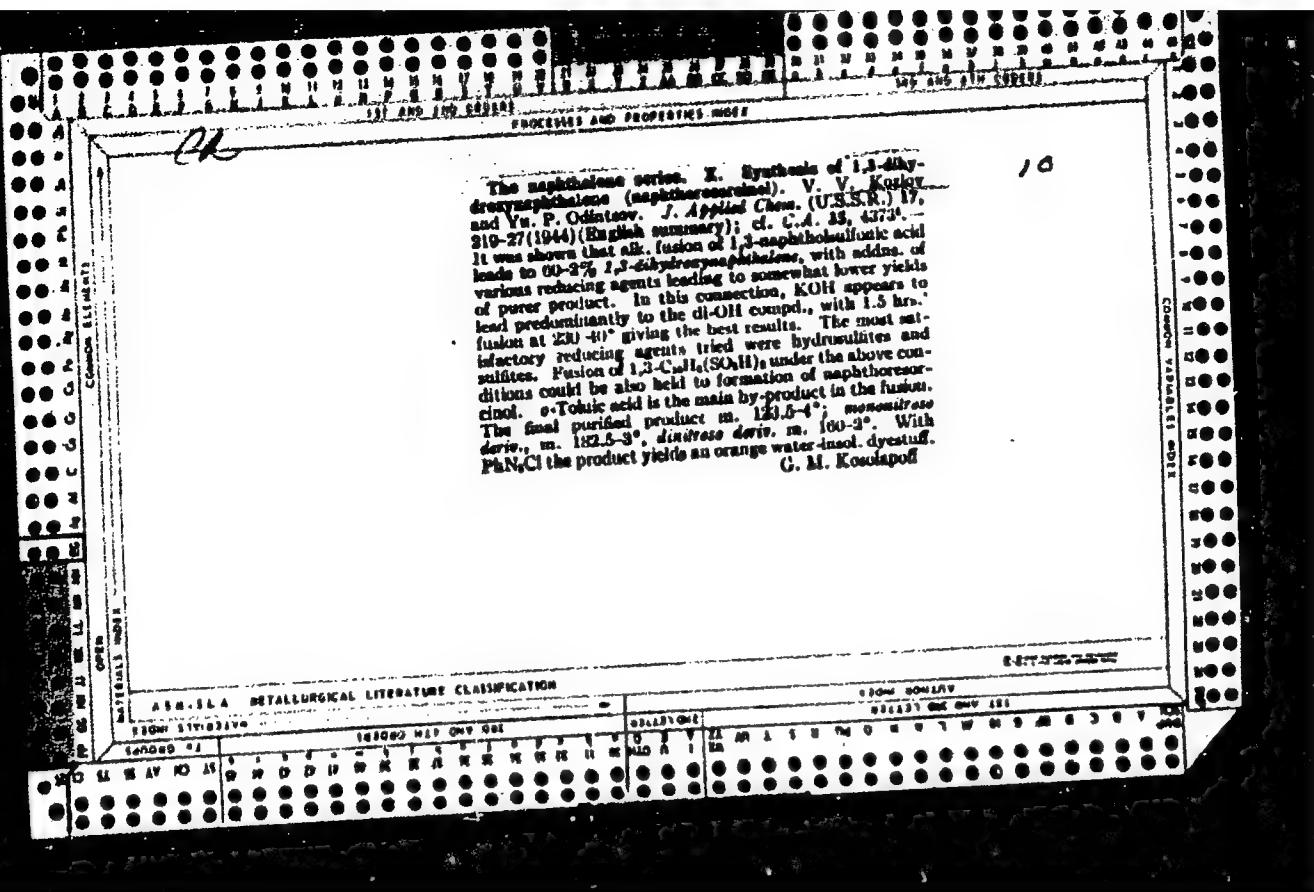


KOZLOV, V. V.; ARKHIPOV, B. N.; SIMANOVSKAYA, A. V.

"Investigations in the Field of Diazo Compound--III. On the Complex Diazo Compounds of Phenylene Diamines With Heteropoly Acids and some Pigments From Them". Zhur. Obshch. Khim. 10 No. 8, 1940. Lab. of Dyestuffs, Moscow Chemico-Technol. Inst. imeni Mendeleyev. Received 13 Oct. 1939.

Report U-1627, 11 Jan. 52



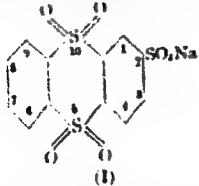


Ca

PROCESSES AND PROPERTIES INDEX

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Thianthrene series. II. 1,4-Dihydroxythianthrene
disulfone. 2-Hydroxythianthrene disulfone. V. V. Koz-
lov and N. I. Stakhovskaya (Moscow Chem. Tech. Inst.);
J. Gen. Chem. (U.S.S.R.) 16, 1115-20 (1946) (in Russian);
cf. C.I. 35, 4029. —Na 2-thianthrenesulfonate 5,10-di-
sulfone (I) (1.27 g.), 8 g. NaOH, 0.65 g. NaNO₂, and 20



cc. water were heated in an autoclave 5 hrs. to 100°, the mixt. acidified to Congo red with HCl, evapd. to dryness, and extn. with EtOH to give 0.5 g. 1,2-dihydroxythianthrene 5,10-disulfone, a deep-yellow mass, m. 197°; di-Na salt, yellow needles (from dil. EtOH); Pb salt, yellow grains (from EtOH); the K, Ca, Zn, Co, Ni, and Cu salts are readily sol. in water and EtOH, the Ag salt, poorly sol. in water. The above expt. was repeated, using 2 g. Na salt and 2 g. CaO in 20 cc. water 3.5 hrs. at 180° (II), followed by acidification with HCl to Congo red; the soln. was then condensed with diazo-*p*-nitroaniline in Na₂CO₃ soln. to yield a red-orange dye. The product of

the Cu²⁺ reaction may be partially extd. with Et₂O, CHCl₃, or Et₂Ac from the original reaction mixt., but, due to its great solv. in water, the mother liquors still give the above-mentioned dye. It was possible to isolate only 25-30% 2-hydroxythianthrene 5,10-disulfone (II), m. 160° (decompn.) (from EtOH), in a state of comparative purity; it gives a brown color with FeCl₃, a black ppt. with NH₄AgNO₃, a white ppt. with CaCl₂, and a yellow ppt. with Hg water. II was acetylated only with difficulty on heating to 120° with Ac₂O in the presence of a little H₂SO₄; Ac deriv. m. above 300° (from EtOH); treatment with Br in AcOH gave a dibromide, CuH₂O₂S₂Br₂, m. 159.5° (from AcOH or EtOH). The mono-OH compd. may also be obtained in 17% yield by conducting the autoclave reaction with 1.27 g. Na sulfonate, 2 g. NaOH, and 20 cc. water 5 hrs. at 180-90°, with isolation of the product by EtOH extn. of the evapd., acidified reaction mixt.

G. M. Kosolapoff

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

1946-1951

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92261 424-679

SEARCHED INDEXED FILED

46

Ca

MEMBERS AND PROPERTY JUDGES

1998 AND 1999 GROWTH

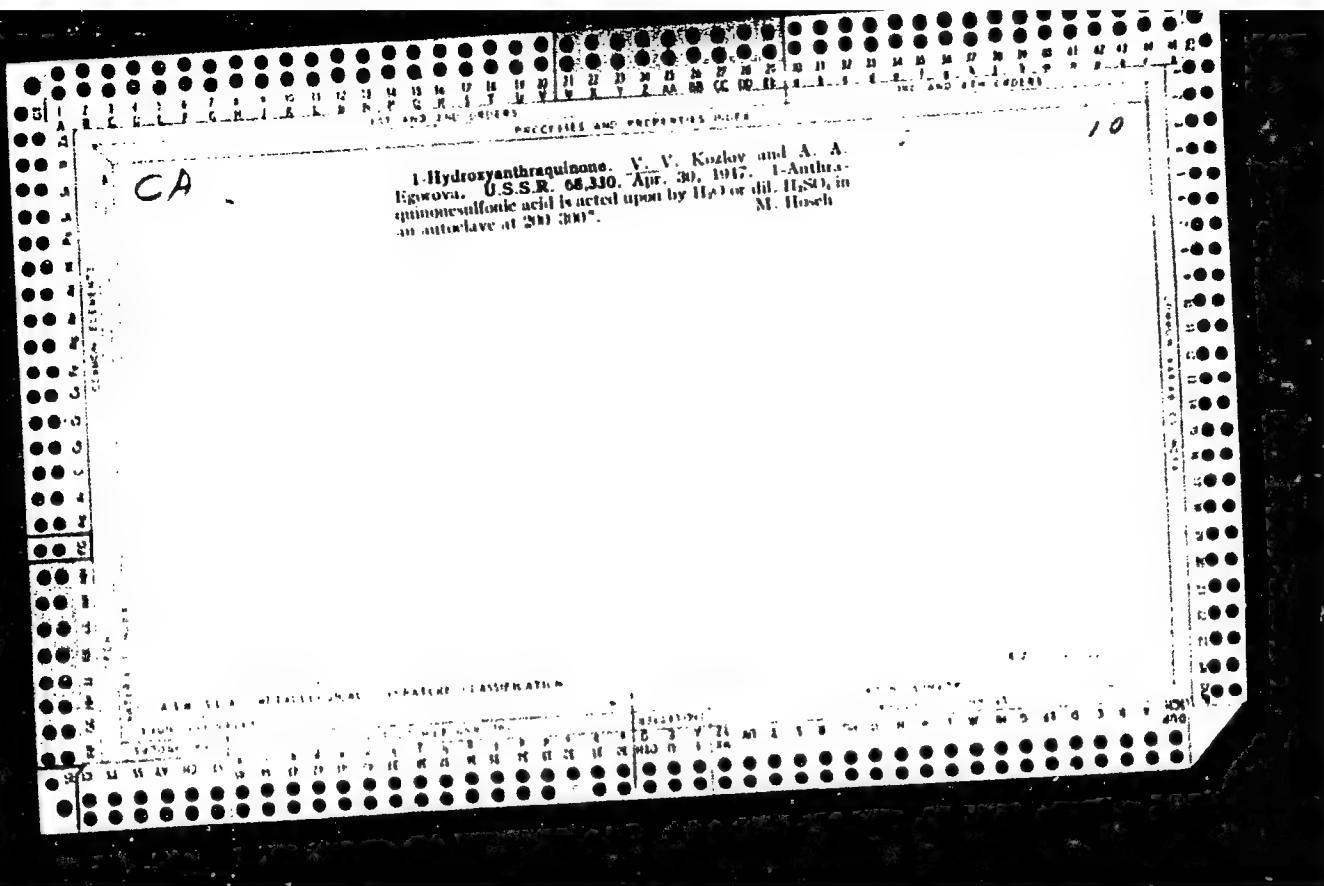
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The naphthalene series. XI. Rearrangement of the salts of 1-naphthol-4-sulfonic acid into the salts of 1-naphthol-2-sulfonic acid. N. V. Kudov and M. A. Shil'keberg (Moscow Chem. Tech. Inst. Mendeleeva). *J. Gen. Chem. (U.S.S.R.)* 16, 1291-1302 (1940) (in Russian); cf. *C. I.* 31, 2744. The rearrangement of salts of 1-naphthol-4-sulfonic acid into the salts of 1-naphthol-2-sulfonic acid was studied in respect to the effect of temp. and time; the results were completely analogous to those reported earlier (Vorushilov, et al., *J. Russ. Chem. Soc.* 33, 4373) in connection with the formation of salts of 1-naphthylamine-2-sulfonic acid. The rearrangement apparently proceeds through the intermediate formation of a 1-naphthol sulfate ester; the reaction is completely inhibited by CaC_2 . The temp. range studied was 130-200°, with max. duration of 6 hrs. In a typical expt., 3.25 g. Na 1-naphthol-4-sulfonate and 20 g. sand were heated to 180° 3 hrs. to give 32.5% 1-naphthol-2- and 63.4% Na 1-naphthol-2-sulfonate. The separ. of the products was effected through the K salts; salting out with KCl yielded only the K 1-naphthol-2-sulfonate, the 4-isomer remaining in soln. G. M. K.

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APPROVED FOR RELEASE: Monday, July 31, 2000

CIA-RDP86-00513R000825910C



KOZLOV, V. V.

PA 15T46

USCR/Chemistry - Anthraquinone
Chemistry - Sulfonic acid

Feb 1947

"Investigation of the Anthraquinone Series: 1, The
Study of 1,4-Anthraquinone Disulfonic Acid," V. V.
Kozlov, 10 pp

"Zhur Obshch Khim" Vol XVII, No 2

Synthesis of the subject acid, and studies of its
salts with metals and amines.

15T46

KOZLOV, V. V.

PA 15T47

USSR/Chemistry - Anthraquinone
Chemistry - Sulfonic acid

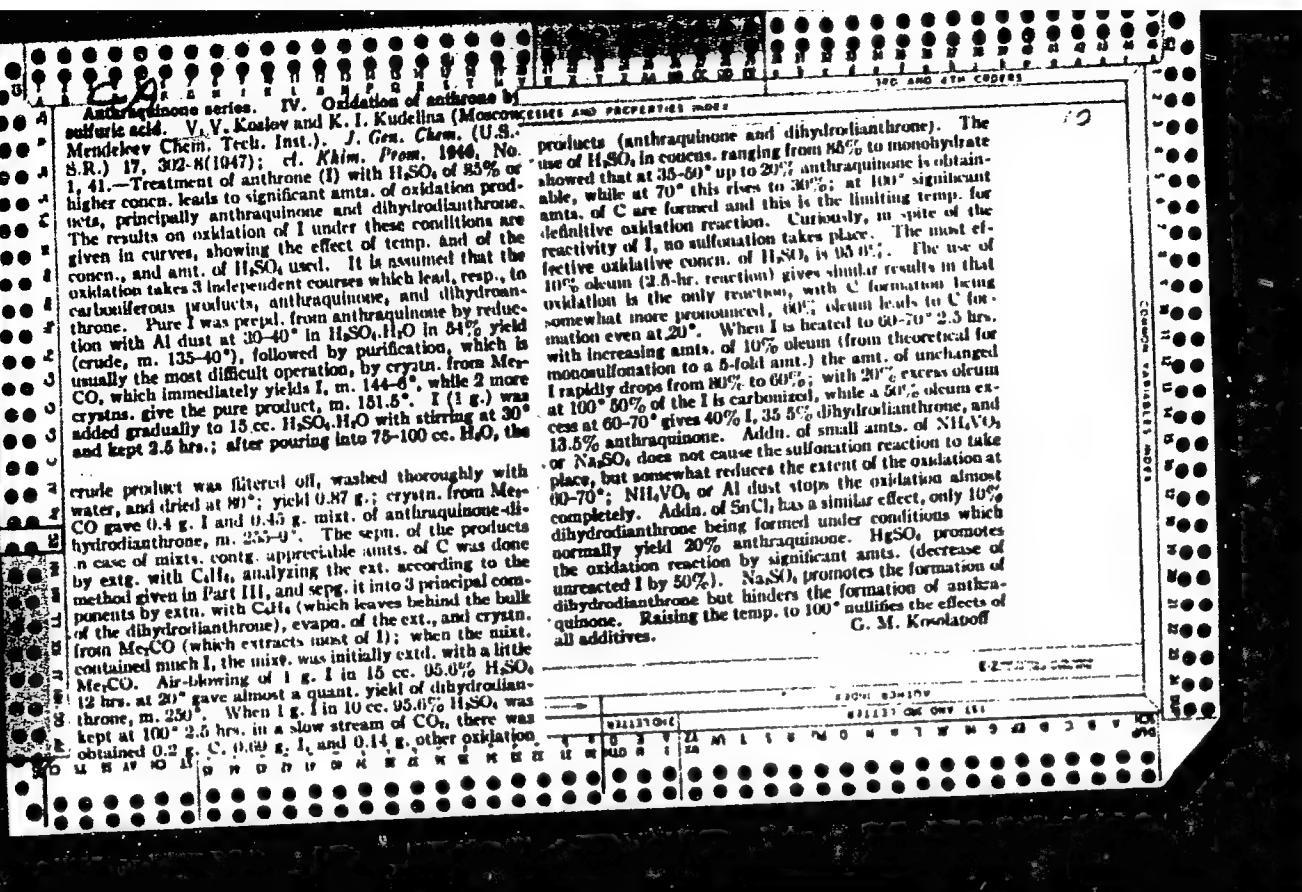
Feb 1947

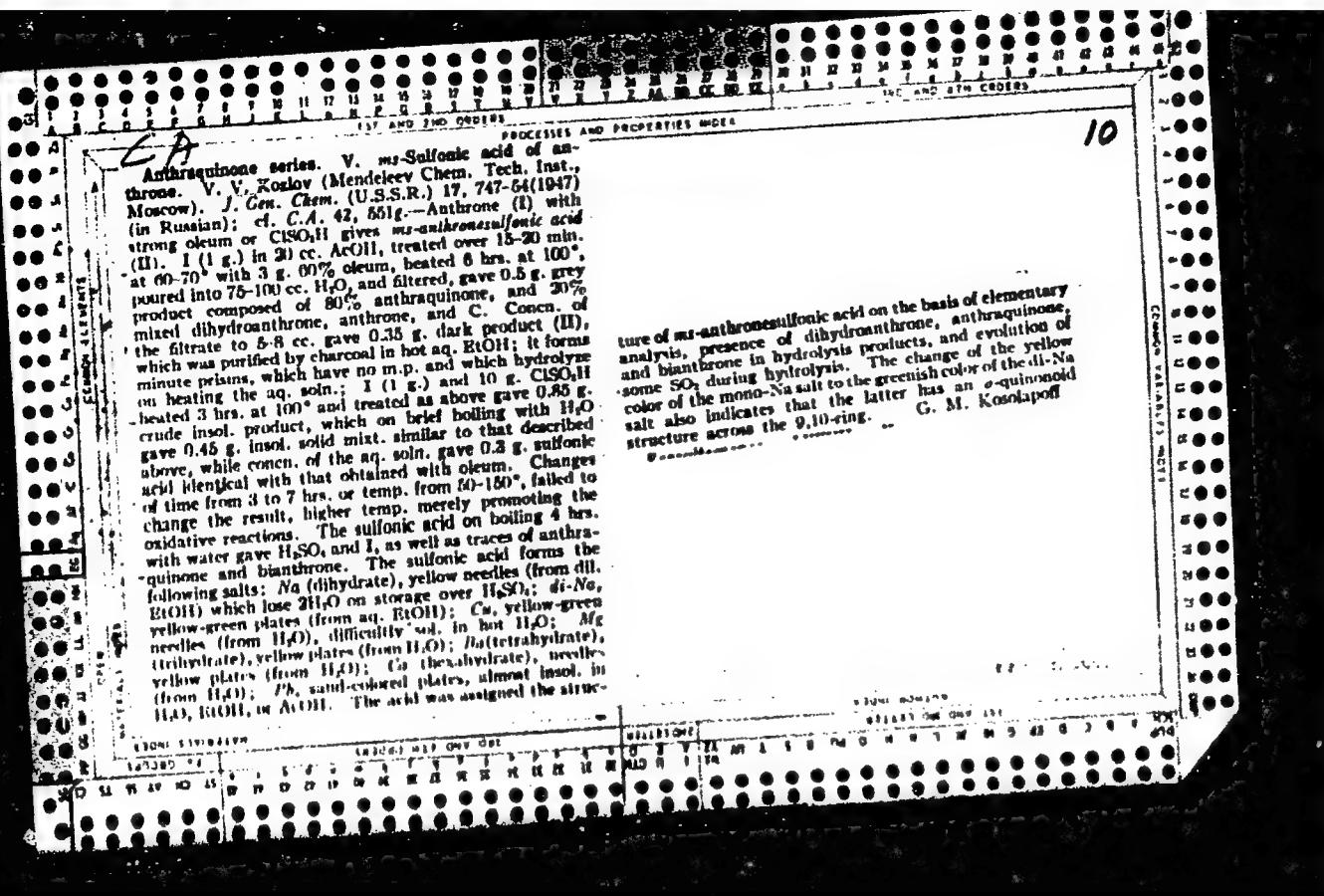
"Investigation of the Anthraquinone Series: 2,1-Chloro-4-Anthraquinone Sulfonic Acid," V. V. Kozlov, 5 pp

"Zhur Obshch Khim" Vol XVII, No 2

Subject acid obtained by action of chlorine on 1,4-anthraquinone disulfonic acid (see above) during its evolution.

15T47





Anthraquinone series. VI. Action of chlorosulfonic acid on anthraquinone. V. V. Kotlov (Moscow Chern. Technol. Inst.). *J. Applied Chem. (U.S.S.R.)* 20, 887-98 (1947) (in Russian); cf. C. A. 42, 123f.—The influence of excess ClSO_3H , time, and temp. on the reaction of ClSO_3H with anthraquinone (I) was investigated. The reaction proceeds in a complex manner and at 135° yields the following derivs. of I: 2-sulfo (II), 2-chlorosulfonyl (III), 2-chloro (IV), dichloro (V), hydroxy derivs. plus anthraene derivs., adducts of Cl and HCl to I, as well as unchanged I. The yield of III as the chief product (86.9%) can be obtained in 3 hrs. at 135° with 30 moles ClSO_3H or with 18 moles ClSO_3H and 1 mole 60% oleum or alkali sulfate. Sulfonation in the presence of Hg does not lead to 1-sulfo derivs.; almost all the Hg sublimes in the form of HgCl_2 . Sepn. of I and III is best done by ligroin, but any fractional cryst. of these substances is not very satisfactory; hence, in view of the rather low content of secondary products, the analysis of the mixts. was best done by sublimation of residual I (temp. is not given); III is estd. by difference. I (20.8 g.) was added over 0.5 hr. at room temp. to 11.7 g. ClSO_3H , after which the mixt. was heated 3 hrs. at $130-3^\circ$; after cooling and pouring on ice, the mixt. was rapidly boiled, filtered at 60° , and the filtrate and aq. washings were heated to the b.p. and treated with 30 ml. 20% Na_2SO_3 ; the salted out Na salt of II (21%) is filtered off in 15 hrs. and recrystd. from H_2O ;

conversion of this to the Cl deriv. gives IV, m. 204-6°, thus showing that the primary product is II. The ppt. obtained from the original reaction mixt. and II(4) usually m. 203-8° and on sublimation gives I (63.8%); cryst. from solvents (unspecified) permits isolation of 5% III, m. 180-91° (from ligroin); no other products were isolated. The use of excess CISO_2H gave addnl. products, summarized as follows: (1) 6 moles CISO_2H : 54% I, 9.6% Na salt of II, 20.2% III, 1.5% IV, 2.5% V, 1.5% hydroxyl deriv. of II, 2.0% hydroxyl deriv. of sulfanthraquinone (VI), 3.5% anthraevic deriv., and 0.15% adducts of Cl to I; (2) 12 moles CISO_2H : 40.0, 2.6, 39.8, 2.5, 3.5, 2.8, 0.6, 5.8, and 0.2%; resp.; (3) 18 moles CISO_2H : 11.6, 9.0, 54.5, 4.0, 7.5, 6.0, 1.5, 2.0, and 0.45%; resp.; (4) 30 moles CISO_2H : —, —, 86.0% trace, 7.0, 9.0, 2.5, 2.5, —. The V referred to represents the mixt. obtained on treatment of the mother liquor, after sepn. of II, with hypochlorite; it is apparently a mixt. of the 2,6- and 2,7-isomers. IV was estd. by Cl analysis of the thoroughly washed ppt. after ice treatment and by fractional cryst. of the sublimate from AcOH , as well as by adsorption of Al_2O_3 from PhMe soln. The VI were detected by the color change of the mother liquor on neutralization by Na_2CO_3 ; the mother liquor with hypochlorites at 80° gave a crude hydroxy chloro deriv., m. 230-80°, while cryst. from AcOH gave $\text{C}_11\text{H}_10\text{O}_3(\text{OH})_2$, m. 204°; although the structure of these compds. was not established, the color change to red on neutralization indicates a 2-OH deriv. Crude III on heating in an autoclave with lime gave 5% 2-hydroxyanthraquinone. G. M. Kosolapoff

ABSTRACT METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Monday, July 31, 2000

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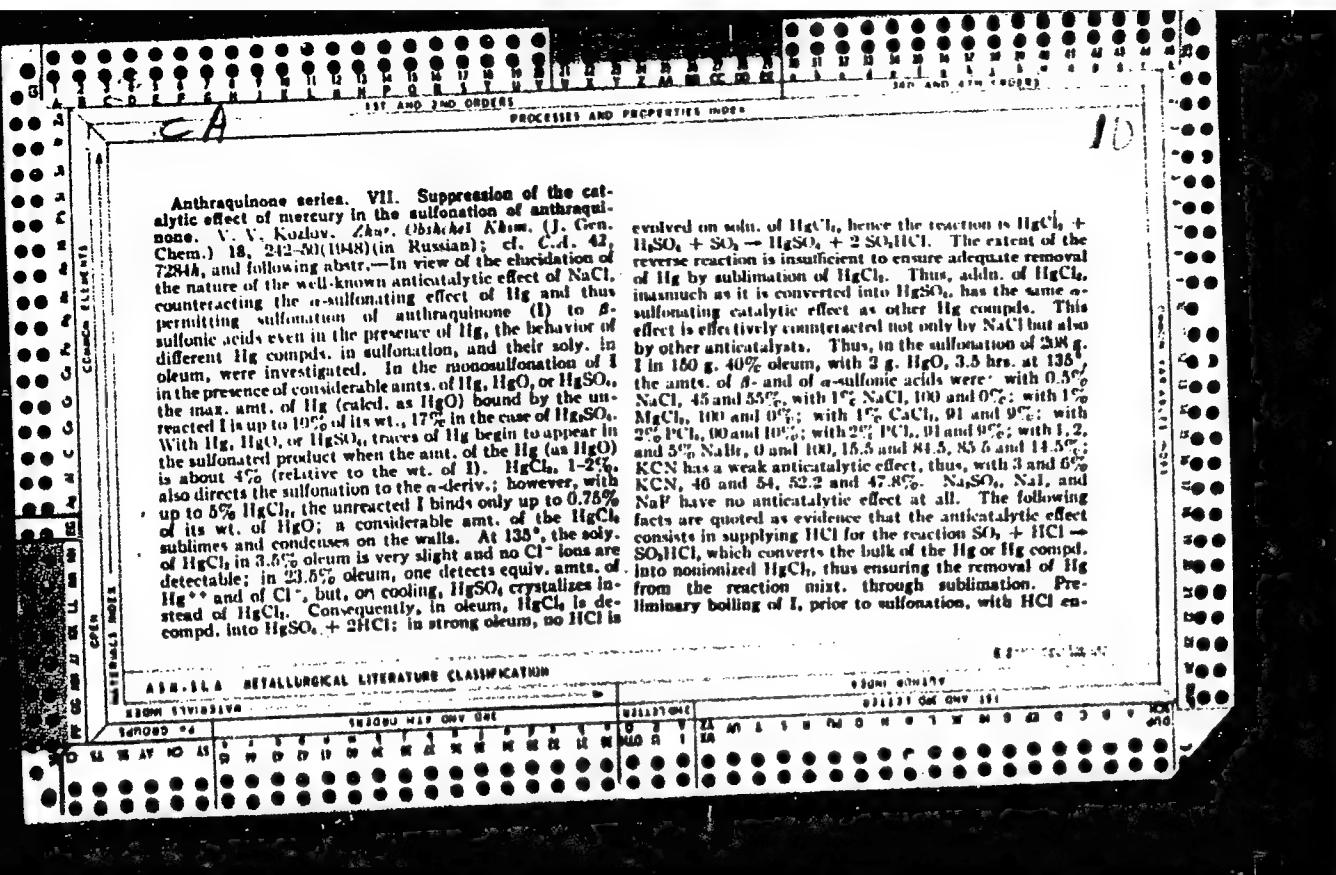
The sulfonation of 2,4'-dinaphthyl sulfone. V. V. Kozlov and G. S. Tulyanskaya (Mendeleev Inst., Moscow); *Doklady Akad. Nauk SSSR*, **58**, 231 (1947); *Chem. Zentr.*, 1948, II, 245 ff. The products of the action of H_2SO_4 on $(2-C_6H_5SO_2)_2$ are extremely difficult to sulfonate under normal conditions. The acid must be concd. and used in large excess. The min. concn. required to produce slow sulfonation at 100° when used in an excess equal to 30 times the theoretical amt. was 87.5%. A like excess of 96% acid sulfonated the sulfone at $15-20^\circ$ within an hour. A 30% excess of the monohydrate (sealed, on monosulfonation) did not produce sulfonation in 5 hrs. even at 105° . No better results were obtained by treating the sulfone in HOAc with 20-30% oleum 8 hrs. at 55° . The addn. of 10% Na_2SO_4 (sealed, on the sulfone) accelerated the reaction somewhat. Because of the equivalence of the 2 naphthalene nuclei, the formation of the monosulfonic acid in addn. to the disubstituted product is very slight. Reaction products reported are: $(7,2'-HO_2SC_6H_5)_2SO_2$ (I); $(7,2'-HO_2SC_6H_5)_2SO_2H$ (III). Lower temps. (II), and $2,5-(2-C_6H_5SO_2)_2C_6H_5SO_2H$ (III).

Lower temps. favored the formation of I and III; at about 100° the formation of III was already slight, while at 105° the principal product was II. The di compds. were not brominated by bromide-bromate, while the mono compd. took up 2 Br atoms. All 3 sulfonic acids showed weak surface activity (emulsifying power). Alkali fusions of the disulfonic acids yielded di-HO derivs. which could be used as new *areo dyes* components. Exptl.: 3.6 g. $(2-C_6H_5SO_2)_2SO_2$, m. 173° , was heated with 30 times the theoretical amt. of concd. H_2SO_4 , the product poured into 100-200 cc. water, filtered off, the unchanged sulfone washed out, the mother liquor and wash concd. The Ba salt of III sep'd. out first, then the Ba salt of I. The filtrate was evapd. to dryness and extd. with 95% alc. The residue was almost pure I; II was obtained from free I, as a hygroscopic mass, m. 64° . The Ba salt with PCl_5 3 hrs. at 100° yielded the dichloride, $C_6H_5SO_2Cl_2$, needles (from C₆H₆, xylene, and HOAc), m. 222° ; 30% hydrol. by heating with water at 100° , completely hydrolyzed by aq. HOAc and aq. alc., formed esters with MeCO anhyd. aks. *Disulfonamide*, platelets from MeCO MeOH, m. 290° ; *disulfonamide*, platelets from PhNH₂.

over

Call, m. 278°. The Ba salt, $\text{CaH}_2\text{OsS}(4\text{H}_2\text{O})$ crystallized from water as octahedrons, $\text{CaH}_2\text{OsS}(4\text{H}_2\text{O})$ from water as rhombohedrons, $\text{CaH}_2\text{OsS}(4\text{H}_2\text{O})$ from aq. alc. as platelets; Pb salt, $\text{CaH}_2\text{OsS}(\text{Pb})$, platelets from 80% HOAc, insol. in water and EtOH; Cu salt, greenish needles, Cu salt, thin needles; Fe²⁺, Ni²⁺, and NH₄ salts, platelets; Hg²⁺ salt, granular, insol. in water; Na, K, Mg, Zn, and Hg²⁺ salts, readily sol. in water; aniline salt, $\text{CaH}_2\text{Os}(\text{SO}_4\text{NH}_2\text{Ph})_2\cdot 4\text{H}_2\text{O}$, needles from water, m. 175°; benzidine salt, $\text{CaH}_2\text{Os}(\text{SO}_4\text{NH}_2\text{C}_6\text{H}_3\text{N}_2)_2\cdot 4\text{H}_2\text{O}$, needles from alc., m. 201°. Deriva. of II: *Dichloride*, microcrystals from glacial HOAc, m. 135°, very sol. in org. solvents and 85% hydrolyzed by heating with water 6 hrs. at 100°, and otherwise analogous to the dichloride of I; *dissulfonamide*, fine crystals from MeOH, m. 189°, insol. in ether, CHCl_3 , xylene, and Cl₂contg. solvents; *dissulfonamide*, needles from MeOH-Call, $\text{CaH}_2\text{Os}(\text{SO}_4\text{Na})_2\cdot 4\text{H}_2\text{O}$, hygroscopic needles from alc.; $\text{CaH}_2\text{OsS}(4\text{H}_2\text{O})$, needles from alc.; *benzidine salt*, obtained as an oily residue. The salts of other metals and of many amines were very sol. in water. PCl₅ with the Ba salt of III gave the *sulfonyl chloride*, needles from Call, m. 180-7° and from this the *2-chloronaphthalene*, m. 11°, and 1,6-dichloronaphthalene, m. 10°.

M. G. Mowr



sures sulfonation to β ; while with equiv. amts. of $HgSO_4$ and NaCl in cooed. H_2SO_4 , preliminarily heated to 100-110°, the product is α ; with a mixt. of $HgCl_2$ or $HgSO_4$ with 2 equivs. of NaCl in 25% oleum, heated as before, β -sulfonic acid is obtained; $HgCl_2$ alone in 25% oleum, preliminarily heated, gives α , but with an addn. of 1% SO_2HCl it gives only β . Sublimation of $HgCl_2$ begins only after a time lag of about 30 min., ascribed to formation of the complex $SO_2HCl \cdot HgCl_2$. The mechanism of the antiscatalytic effect of NaCl can thus be summarized in the scheme: $3 NaCl + 3 H_2SO_4 \rightarrow 3 NaHSO_4 + 3 HCl$; $3 HCl + 3 SO_2 \rightarrow 3 SO_2HCl$; $HgSO_4 + 2 SO_2HCl \rightarrow HgCl_2 + H_2SO_4 + 2 SO_2$; $HgCl_2 + SO_2HCl \rightarrow HgCl_2 \cdot SO_2HCl \rightarrow HgCl_2 + SO_2HCl$ (sublimes); the global reaction is $3 NaCl + 2 H_2SO_4 + SO_2 + HgSO_4 \rightarrow 3 NaHSO_4 + HgCl_2 + SO_2HCl$. The effect of KCN is explained in similar way, by formation of the equally nonionized but less stable $Hg(CN)_2$. N. Thon

CA

Hydrolysis of anthraquinonemonosulfonic acids. V. A. Kozlov and A. A. Rigorova. (Chem.-tech. Mendeleyev Inst., Moscow). *Doklady Akad. Nauk S.S.R.* 57, 407-70 (1947); *Chem. Zentr. (Russian Zone Ed.)* 1948, B, 900-1; cf. C. I., 43, 34002. -Contrary to data in the literature, 1-anthraquinonemonosulfonic acid (I) can be hydrolyzed to anthraquinone (II) by 80% H_2SO_4 , even in the absence of Hg salts. The acid or its Na salt heated with 85% H_2SO_4 under pressure at 100-200° for 6 hrs yielded 64-81% II. Hydrolysis of the 2-acid under pressure is likewise possible in principle. However, heating this acid and was heated to high temps. with concd. H_2SO_4 , side reactions occurred. Hg salts made the hydrolysis of the 1-acid proceed smoothly but were of no value with the 2-acid even in an open vessel or with dil. acid (5%), under pressure at 200°; yield of II, 30%. The reaction is very much accelerated by the presence of Hg, with a Hg:acid molar ratio of 1:1. Heated with water at 150-200° formed 1-hydroxyanthraquinone (III), m. 100°; the reaction liquid contained H_2SO_4 . When dil. H_2SO_4 (0.25%) or even (0.01%) was used, the yield of III decreased in favor of the compound with no OH group. Even when the salts of the acid (Na, K, NH₄, or Cu) were used, the yield of III was poor. It could be increased by using 0.5% H_2SO_4 with the Na salt of I and heating at 250-300° for 12-18 hrs. Heating I with water in the presence of a Hg salt reduced the yield of III; when H_2SO_4 (5.85%) was used only II was obtained. When 1,2-anthraquinonodisulfone and I was heated with H_2SO_4 in the presence of Hg salts only the 1-sulfonic acid group was attacked so that the 2-acid was formed.

M. G. Moore

PA 8/49T51

KOZLOV, V. V.

USSR/Chemistry - Anthraquinone
Chemistry - Anthrone, Mercurization of

Apr 48

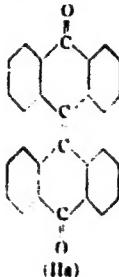
"Studies in the Field of the Anthraquinone Series,"
V. V. Kozlov, Lab of Dyes, Moscow Chemicotech Inst
imeni D. I. Mendeleyev, 10 pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 4

Describes mercurization of anthrone using mercury
acetate and sulfate. Products are dihydronian-
throne, anthraquinone, bianthrone, and mercury
organic compounds. Submitted 13 Feb 1947.

8/49T51

Anthraquinones series. VIII. Mercuration of an-
thrae. V. V. Kozlov. *Zhur. Obshch. Khim.* (J. Gen. Chem.) 18, 767-60 (1948); *cf.* *CA.* 42, 1284f, and preceding abstr.—Anthrone (0.58 g.) and 0.65 g. yellow HgO in 30 ml. $AcOH$ were refluxed 6 hrs. and filtered hot, yielding 0.37 g. of a black solid, which on treatment with 30% HNO_3 18 hrs. at room temp. was freed of metallic Hg and gave 0.2 g. (0.4% g.) yellow amorphous $C_{10}H_7O_2Hg$ (I), probably $6a(9,10-dihydro-10-oxa-9-antrol)-Hg$ —mercury. The major product isolated by cooling the soln. was 10,10'-biantrone (II), m. 236° (from $AcOH$, the CH_2Cl_2) (0.47 g.), and small amounts of unreacted anthrone. As the reaction time is increased to 12 hrs. the amt. of the latter drops to 14.4%, the "black product" increases to 0.30 g., and II increases to 0.42 g. I, titrated with a little ultramarine oil and boiled with stirring with concn. HCl 3 hrs., gave $HgCl_2$ and II; I (0.2 g.) in 6 ml. 6% oleum treated with Cl for 45 min. at 15°, then poured into ice water, gave 0.1 g. $10,10'-dichloroanthrone$, m. 131.5° (from dil. $RuOH$). Heating 10 g. anthrone, 10 g. HgO , and 250 ml. $AcOH$ gave 0.21 g. I and 7.1 g. yellow product, m. 210-18°, which after extn. with $MgCO$ and crystall. from $AcOH$ gave 0.15 g. residue, does not m. up to 300° and on reduction by $Zn-AcOH$ gave 10,10'-bi-9-anthrol, m. 229.5°, indicating that the original product was IIa. When 5 g. anthrone, 5 g. $Hg(OAc)_2$, and 250 ml. $AcOH$ were refluxed the following products were isolated:



1 hr., 3.76 g., II, 1.1 g., anthraquinone, 0.15 g., IIa, and 0.075 g., I; 4 hrs., 4.8, trace, 0.07, 0.08, resp.; addn. of some Al dust in the last expt. gave 0.6, 0.1, 0.1, resp., as well as 4.4 g. recovered anthrone. In expts. lasting 6-12 hrs, small amts. of phthalic anhydride and phthalide were also isolated. Anthrone (0.5 g.) in 10 ml. H_2SO_4 - H_2O treated with 0.8 g. Hg sulfate in 10 ml. H_2SO_4 - H_2O , heated 2 hrs. at 80-60°, then poured into water, gave 0.81 g. solid, which after extn. with $CHCl_3$ gave 0.15 g. black residue, $C_{14}H_8O_2SbHg$ (III), which is insol. in the usual solvents and does not melt; it is probably *mono-thiomolybdate* *II sulfate*; the $CHCl_3$ ext. gave 0.31 g. II, m. 245-7°, 0.07 g. mixt. of anthraquinone with II, m. 232-6°, and 0.08 g. anthraquinone-anthrone mixt., m. 170-4°. Use of a higher temp. (70-80°) increases the

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difficulty of isolation of III because of C formation. III with CrO_3 in H_2SO_4 at 80° 1 hr. gave anthraquinone (85%); passage of dry air into soln. of III in $\text{H}_2\text{SO}_4\text{H}_2\text{O}$ at $80-90^\circ$ 8 hrs. gave the same product and II; III mixed with a little glycerol and AcOEt and treated hot with concd. HCl and KClO_3 gave anthraquinone and *m*-dichloranthrone; III refluxed with KI in dil. HgOH in the presence of a little alizarin oil gave anthrone, II, and a brown Hg deriv., insol. in org. solvents, which on treatment with HgSO_4 loses S, but retains Hg, analysis giving $\text{C}_{14}\text{H}_{10}\text{O}_2\text{Hg}$ (mol. wt. in HgSO_4 , 860); it is apparently identical with I. Heating 0.6 g. II and 0.6 g. HgSO_4 in 20 ml. $\text{H}_2\text{SO}_4\text{H}_2\text{O}$ 2 hrs. at $80-90^\circ$ with stirring gave 0.2 g. anthraquinone and 0.3 g. IIa; no Hg deriv. was isolated. IX Action of sulfonating agents on mercury-containing compounds of anthrone. *Jnd.* 801-6.—The action of sulfonating agents on *mero*-Hg derivs. of anthrone gives a complex mixt. as a result of direct exchange of the Hg residue for the SO_3H group, oxidative reactions, and side reactions. 10-Anthraquinolmercury sulfate (IV) (0.8 g.) and 2 ml. $\text{H}_2\text{SO}_4\text{H}_2\text{O}$ heated 1 hr. at 100° and then poured into 8 ml. water gave a ppt. contg. 0.20 g. original Hg deriv.; no sulfonic acid is detected in the filtrate; traces of anthraquinone and 0.03 g. II, m. 284°, are found in the

ppt. The Hg deriv. (1.2 g.) and 6 g. 20% oleum after 3 hrs. at 70° gave 0.2 g. II and 0.02 g. anthraquinone, while the soln. after neutralization, filtration, and acidification gave 0.33 g. anthrone-*m*-sulfonic acid (V) (cf. K., C.A. 42, 1251f); similar heating for 3 hrs. at 135° gave 0.04 g. V, traces of an anthraquinone-sulfonic acid, and 0.6 g. II, as well as traces of IIa and C. Heating 0.6 g. V with 6 g. 20% oleum 3 hrs. at 135° failed to yield anything from an alk. ext. besides 0.03 g. chloranthraquinone, m. 202° (obtained by treatment of the filtrate with HOCl); the insol. portion gave 0.08 g. anthraquinone and 0.3 g. II. IV (1.8 g.) and 6 g. CISO_3H_2 heated 3 hrs. to 135° gave some HgCl_2 and 0.66 g. V, as well as 0.009 g. II and 0.008 g. anthraquinone. The Hg deriv. of II (2 g.) and 6 g. 20% oleum after 1 hr. at 70° , filtered hot after pouring into water, gave on neutralization of the aq. soln., filtration, and acidification, 0.3 g. V, while HOCl added to the filtrate gave a trace of 1-chloranthraquinone, m. 181.8°; the main ppt. (1.3 g.) on extn. with CHCl_3 left 0.3 g. insol. residue contg. S and Hg and corresponding compn. to IV; the CHCl_3 ext. gave 0.7 g. II and 0.12 g. anthraquinone. G. M. Koulapoff

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"Studies of the Anthraquinone Series," II, "V. V. Kozlov, Lab of Dyes, Moscow Chemicotech Inst. imeni D. I. Mendeleyev, 4 3/4 pp

"Oberth Kritik" Vol. XXIII (XXX), 67

Devoted to action of sulfurizing agents on meso-mercury compounds of anthrone. With the meso-mercury compound, a complex mixture is formed as the result of direct replacement of the mercury by a sulfo group, by oxidizing condensation and similar processes. The action of oleum (70°) on meso-mercury-sulfate or on dilydroquinone-mercury results in the formation of 8/49561

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Streptomyces - Anthrone (Contd)

anthrone meso-thiocarbonate and dihydroanthrone as basic products. At 1350, the main product is dihydroanthrone. When chlorosulfuric acid (1350) reacts with anthrone meso-mercury-sulfate, the main product is anthrone meso-thiocarbonate. Submitted 18 Mar 1947.

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